LAWRENCE TECHNOLOGICAL
UNIVERSITY
UNDERGRADUATE CATALOG
2022-23

Announcement of General Information and Courses in the Colleges of

Architecture and Design
Arts and Sciences
Business and Information Technology
Engineering
and
Specs@LTU

For the Academic Year 2022–23

Lawrence Technological University

CONTENTS

LawrenceTechnologicalUniversity

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 Office of the Registrar in writing when they register each semester.

Lawrence Technological University

Academic Calendar

FALL 2022 SEMESTER

April 11 – August 21	Registration open - no late fees apply
August 21	Last day to register for traditional semester courses without a late fee
August 22	Traditional semester courses begin; add/drop period begins
August 28	Last day to add/register for a class on Banner Web
August 29 – September 5	All adds and registrations require Instructor and Department Chair approval on paper Registration Form
September 5	Last day to drop traditional semester courses with refund
(no refund for classes dropped after September 5)	
September 6	Withdrawal period begins for traditional courses
September 3 – September 5	Campus closed for Labor Day break
September 6	Classes resume after Labor Day break
September 20	Faculty Assessment Day - all day and evening courses are cancelled
November 18	Last day to withdraw from traditional semester courses
November 22	Last day of classes before Thanksgiving break
November 24 – November 27	Campus closed for Thanksgiving break
November 28	Classes resume after Thanksgiving break
December 3	Commencement (Fall 2022 graduates)
December 9	Last day of traditional semester classes before Final Exams
December 12-15	Traditional Semester Final Exams
December 15	Fall 2022 semester ends
December 21	Grades due for traditional semester courses (11:59 p.m.)

SPRING 2023 SEMESTER

November 7 –January 8	Registration open - no late fees apply
January 8	Last day to register for traditional semester courses without a late fee
January 9	Traditional semester courses begin; add/drop period begins
January 16	Last day to add/register for a class on Banner Web

January 16	Campus closed for Martin Luther King, Jr. Day
January 17 – 20	All adds and registrations require Instructor and Department Chair approval on paper Registration Form
January 22	Last day to drop traditional semester courses with refund (no refund for classes dropped after January 22)
January 23	Withdrawal period begins for traditional courses
March 3	Last day of classes before mid-semester break
March 4 - March 12	Mid-semester break (no classes in session)
March 13	Classes resume after Mid-semester break
April 7	Last day to withdraw from traditional semester courses
May 1	Last day of traditional semester classes before Final Exams
May 2-5	Traditional Semester Final Exams
May 5	Spring 2023 semester ends
May 6	Commencement (for Spring and Summer 2023 graduates)
May 10	Grades due for traditional semester courses (11:59 p.m.)

SUMMER 2023 SEMESTER

April 10 – May 14	Registration open - no late fees apply
May 14	Last day to register for traditional semester courses without a late fee
May 15	Traditional semester courses begin; add/drop period begins
May 19	Last day to add/register for a class on Banner Web
May 26	Last day of classes before Memorial Day
May 27 – May 29	Campus closed for Memorial Day break
May 20– May 26	All adds and registrations require Instructor and Department Chair approval on paper Registration Form
May 21	Last day to drop traditional semester with refund (no refund for classes dropped after May 21)
May 30	Classes resume after Memorial Day break
May 22	Withdrawal period begins for traditional courses
July 3 and 4 (no classes in session)	Campus closed for Independence Day break
July 5	Classes resume after Independence Day break
July 7	Last day to withdraw from traditional semester

July 21	Summer 2023 Semester ends

The University reserves the right to adjust 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 on the website of the Office of the Registrar on the Open Learning schedules, by calling the Enrollment Services Office at 248.204.2280, or emailing enrollmentservices@ltu.edu.

IT scheduled downtime for upgrades and maintenance (subject to change):

Weekend of September 17, 2022
Holiday Break – December 24, 2022-January 2, 2023
March 4, 2023
Weekend of May 20, 2023
Weekend of July 29, 2023

Lawrence Technological University

Possible Is Everything

Lawrence Technological University is one of only 13 private, technological, comprehensive doctoral universities in the United States. Leading-edge, technology-infused academic programs, dynamic campus life, NAIA, varsity, junior varsity, club, and intramural athletics, and proven career placement also help make LTU unique. Lawrence Technological University is for students who dare to believe everything is possible and know 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, Business and Information Technology, Engineering, and Specs@LTU. Approximately 3,000 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 think big and dare to make a difference. 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. It is because of these high standards and their educational preparation that Lawrence Tech graduates report 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 11 percent of all U.S. universities. Lawrence Tech provides a rigorous, high-quality education – an education that clearly pays off. In addition, over 80% percent of students are employed or registered for graduate school at commencement, above the national average.

The University's heritage and educational philosophy is summed up 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 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.

Lawrence Tech students are strongly encouraged to interact with the professional world throughout their academic career. 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 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
Business and Information Technology: AACSB, ACBSP, IACBE
Chemistry: American Chemical Society
Engineering: ABET
Game Design, Graphic Design, Industrial Design, Interaction Design, Interior Architecture, Interior Design, and Transportation Design: NASAD

Interior Architecture and Design: CiDA
Nursing: CCNE
Physician Assistant Program (provisional accreditation): ARC-PA

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 (ESD)
Higher Learning Commission (HLC)
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 County 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 several 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. Lawrence Tech has long been a pioneer in addressing the needs of all students and developed some of the nation's first evening class programs in 1932.

A number of courses and programs 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 Office of 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 300 full- and part-time faculty members. Faculty exemplify the University's motto of "theory and practice," by bringing both academic experience and 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 their professors are normally easily accessible and 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

While many of Lawrence Tech's more than 35,000 degree-holding alumni reside right here in Michigan, you can find an LTU alum in nearly every corner of the world. Lawrence Tech's Alumni Association works to keep alumni everywhere connected to the University after graduation through newsletters, events, and regular communication about exciting alumni news and University programs. Learn more about getting involved with your alma mater after graduation at ltu.edu/alumni. Lawrence Tech's Alumni Association is the international forum for active graduates. The association's website 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 Philanthropy and Alumni Engagement coordinates alumni activities and serves as a campus liaison for alumni worldwide.

Lawrence Technological University

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. According to the Michigan Economic Development Corporation, Michigan has recorded $11.8 billion in foreign direct investment from 2016-2020 within several key industries such as automotive, renewable energy, and industrial equipment. The MEDC also states that, "Michigan's collection of world-class talent is among the top reasons why businesses locate and expand in the state. Employers find that Michigan has one of the most talented, diverse and abundant workforces in the country and has the programs, resources and state-wide support that continues to build talent with in-demand skills that help businesses thrive."

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, much of the United States' 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. The Detroit Regional chamber states that Michigan is home to 96 of the top 100 automotive suppliers to North America and more than $10 billion is spent on automotive research and development annually, which amounts to 75% of the U.S. total.

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 ranks 13th nationally in total exports, with businesses producing $14.5 billion in merchandise exports, according to the Oakland County Economic Outlook. The county is a leading center of international commercial activity and home to more than 1,000 firms from 39 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 more than $5.4 billion in private investment and has created and retained more than 93,000 jobs.

Nearby recreational opportunities abound – there are more than 1,400 lakes, rivers, and streams, 65 miles of trails, 76 public and private golf courses, and close to 500 institutions of art, culture and the humanities in Oakland County according to the Oakland County Annual Report. Major entertainment facilities within a half-hour's drive include Pine Knob and Meadow Brook outdoor

music theaters, Little Caesars Arena (home of the NHL Detroit Red Wings and NBA Detroit Pistons), 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 **Alumni House** (Building #20), built in 1959 and substantially upgraded in 1996, is used for alumni events and houses additional staff from the Office of Philanthropy and Alumni Engagement.

The **Applied Research Center** (Building #15), houses labs and offices for the Motorsports student teams (Formula SAE®, Formula Electric, 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** (Building #4), 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 **Wayne H. Buell Management Building** (Building #5), 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 Business and Information Technology, library, dining commons, and bookstore. The Offices of the President and the Provost 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.

Connected to the Engineering Building is the **Nabil Grace Center for Innovative Materials Research** (CIMR) (Building #1), 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. This unique center has been developed and overseen by Grace, dean of the LTU College of Engineering, who was instrumental in its construction and operation, and who has spent a lifetime researching advanced construction materials. Grace's name was added to the CIMR in August 2021.

The **Edward Donley Residence Hall** (formerly Housing North) (Building #12), opened in 2002, 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 devoted LTU supporter Ed Donley, BME'43, HD'76, HD'87. See the Housing section of this *Catalog* for additional information.

The **East Residence Hall** (Building #13), opened in 2018, accommodates 308 freshman students. The four-story building features furnished community-style rooms that each accommodate two students. The building has communal laundry, two bathroom facilities on each floor, a game room, bike storage facility, a music practice room, and lounges throughout.

Lawrence Tech's **Engineering Building** (Building #9) 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** (Building #18) office complex was acquired by the University in 2015 and accommodates offices for Finance and Administration, Business Services, Human Resources, Campus Facilities, the Centrepolis Accelerator (a business accelerator space), the Southfield SmartZone, and Southfield Michigan Works!

The **General Services Building** (Building #17) houses the offices of the University architect, athletic coaches, Campus Safety, and Mail Services, as well as a high-tech esports arena.

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** (Building #14), opened in 2015, accommodates 150 upperclassmen 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** (Building #15), 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. The building includes a 1,500-seat gymnasium, exercise track, two weight and conditioning room, saunas, racquetball courts, and locker facilities.

The **Science Building** (Building #7), opened in 1967, has been extensively renovated and equipped with upgraded computers, labs, 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.

The **South Residence Hall** (Building #21)**,** opened in 1977 and renovated in 2019, 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** (Building #5), 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 with the DTE Energy One-Stop Center – providing convenient one-stop access to the Offices of Admissions, Financial Aid, the Registrar, Cashier, Dean of Students, Career Services, International Programs, Student Life, Clinical Counseling Services, University Housing, Laptop Help Desk, Academic Achievement Center, Disability Services, Writing 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** (Building #8) 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.

The **University Services Building** (Building #16) houses Philanthropy and Alumni Engagement, Marketing and Public Affairs, LTU Online, e-Learning Services, Information Technology Services, and the Physician Assistant academic program.

Lawrence Tech's **University Technology and Learning Center** (Building #3), opened in 2001, is an 87,000-square-foot building housing a variety of technology labs and classrooms, 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 the **Architecture** and **Engineering** buildings.

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

Lawrence Technological University

Services for Students

UNIVERSITY ADVISING CENTER (UAC)
Mission
Lawrence Technological University is committed to the excellence of academic advising and recognizing that it is a crucial component of the student centered educational experience.

Through academic advising, we empower students to develop and implement sound educational plans that are consistent with their personal values, goals, and career plans. Our purpose is to guide students to become self-directed learners and decision makers.

Services include but are not limited to:
- Change of academic major discussions
- Impact of withdrawing/dropping classes
- Academic advising for students with disabilities
- Assisting with navigating campus resources
- Balancing semester credit loads
- Course selection and planning
- Assigning students to their appropriate advisor
- Any questions on policies, procedures, and protocols

For any questions, or to schedule an appointment, please email advisor@ltu.edu or visit ltu.edu/advising

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. The AAC is located in the A. Alfred Taubman Student Services Center in room C201.

Services Offered:
Student Success Program is a student degree persistence and success program. First and second year students, student athletes and other undergraduate students who are facing academic obstacles receive additional support to help them succeed academically, build their academic skill set and strengthen their connection to the University. Students 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 and overall academic success.

Tutoring is available for architecture and design, chemistry, computer science, engineering, ESL conversation, mathematics, physics, and writing. Tutors include LTU faculty members and exemplary students. Students may walk into the AAC and work with a tutor any weekday during day and evening hours, or meet with a tutor online. The tutoring schedule is available in the AAC or online (ltu.edu/aac/tutoring.asp).

Academic Success Workshops are offered every semester and designed to aid students in their pursuit of academic excellence. The workshops are designed to help students improve skills like 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 fall classes start. Pre-Courses introduce students to the material that will be covered in specific classes while refreshing them on past material that they need to know. Visit our webpage to view the schedule and register online (ltu.edu/aac/precourses.asp).

Supplemental Instruction in Science Modules (SIMS) is a new program. SIMS allows students to review short math and science videos online to refresh themselves on math and science concepts needed to succeed in their registered courses. Modules that review pre-algebra, algebra, trigonometry, linear equations, and logarithms have been developed.

Study Tables are designed to help student-athletes and LTU Scholars succeed in their courses. Study Tables are offered during the week and on weekends and are monitored by AAC staff. The weekly study time requirement is set by the AAC staff. The time requirement takes into consideration the recommendation of the NAIA and Study Table programs similar to Lawrence Tech.

CAMPUS Connections is a free, immersive bridge program held before fall classes begin. CAMPUS Connections offers participants the opportunity to refresh key math concepts before retaking the math placement exam with the goal of placing into Precalculus (MCS1074) while also building community through meaningful academic and social activities. Students interested in CAMPUS Connections may access participant criteria and registration online.

LTU Scholars is a close-knit community of students who support each other's academic and life goals. LTU Scholars meet monthly and attend academic success workshops hosted by the AAC during the academic year. New, first-year students can get involved by participating in CAMPUS Connections or by attending an LTU Scholars meeting. Continuing students are also welcome to attend LTU Scholars meetings. Visit our webpage for more information.

Testing Services offers in-person and on-paper proctored testing to students who are unable to complete exams/quizzes during regularly scheduled class time. To use this service, contact the AAC at least 24 hours in advance for an appointment time and submit a Testing Service Request form (to be completed by the instructor). Visit ltu.edu/aac/exam-proctor.asp for additional information.

ACADEMIC COUNSELING AND TUTORIAL SERVICES
The Academic Achievement Center works with the Office of Disability Services to provide tutorial and testing services for students with disabilities. To contact the Office of Disability Services, email disability@ltu.edu or call 248.204.4100.

HORLDT FAMILY WRITING CENTER
The Horldt Family Writing Center, located in C305 of the Taubman Student Services Center, assists students with their writing needs. The writing center is staffed by faculty members and assists

students at any point in the writing process. The writing center's goal is to improve the student writer and stress the importance of the writing process within all disciplines.

The Horldt Family Writing Center offers one-on-one tutor sessions to address planning, developing, and revising written work. In addition to these sessions, the writing center facilitates the KCP Writing Workshop Fridays events. These workshops correspond to the writing assignments students have in the Core Curriculum.

The writing center also operates a summer workshop series the week before the fall semester. The nine-hour workshop better prepares students for academic writing and focuses on analysis and argument.

The Horldt Family Writing Center operates fall, spring, and summer semesters; students can contact it through the Canvas page, at writingcenter@ltu.edu, or drop by C305. For current hours and workshop dates please visit the center's website at ltu.edu/onestop/hwc.asp

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 marketing staff can help with publicity, and regularly reports news of campus activities to the press, radio, and television. Connect with Marketing at mktgpub@ltu.edu.

Students interested in forming new organizations should contact the Office of Student Life. 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 Government

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 the Presidential Ball. To get involved, contact the Office of Student Life at 248.204.3142 or email stugov@ltu.edu.

Registered Student Organizations **
American Chemical Society (ACS)*
American Institute of Architecture Students (AIAS)*
American Institute of Graphic Artists (AIGA)
American Society of Biochemistry and Molecular Biology*
American Society of Civil Engineers (ASCE)*
American Society of Mechanical Engineers (ASME)*
Architectural Engineering Institute (AEI)*
Art Shop LTU
Association of Indian Students
Biomedical Engineering Society (BMES)*
Blue Devil Digital
Black Students Union (BSU)
Cru
Designers for Education at Lawrence Tech, Assembly (DELTA)*
ElevenFinity
Engineering Society of Detroit (ESD)
eSports
Illuminating Engineering Society (IES)
Industrial Designers Society of America (IDSA)*
Infinite Machine
Institute of Electrical and Electronics Engineers (IEEE), Southeastern Michigan Chapter*
International Interior Design Associate (IIDA)
LTU Fishing Club
LTU Student Union
LTU Veterans Group (SVA)
Math Club
Muslim Student Association (MSA)
National Organization of Minority Architects (NOMAS)*
National Residence Hall Honorary (NRHH)

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Phi Beta Sigma
Phi Kappa Upsilon
Sigma Phi Epsilon
Sigma Pi
Theta Tau (Co-Ed Professional Engineering Fraternity)

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

ATHLETICS AND INTRAMURALS
The following programs are administered by the Department of Athletics, Student Recreation, and Wellness, located in the Don Ridler Field House. Any questions regarding Student Recreation can be directed to sturec@ltu.edu; additional questions regarding Athletics can be directed to athletics@ltu.edu

Varsity Athletic Programs Lawrence Technological University Athletics 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. Lawrence Tech currently competes in:

> Co-Ed Band (Marching/Pep)
> Co-Ed Cheer Team
> Co-Ed Dance Team
> Co-Ed eSports
> 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 Track and Field
> Men's and Women's Volleyball
> Men's and Women'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, alumni, and field house members. The intramural sports calendar can be found at imleagues.com/ltu. Intramural sports include, but are not limited to, basketball, flag football, indoor soccer (futsal), dodgeball, and golf. A current LTU ID is required for all student participants. All participants are required to sign up online at imleagues.com/ltu.

ATM (CASH)
There is an automated teller machine (ATM), hosted by Michigan First Credit Union, located in the atrium of the Buell 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 on the third floor of the Buell Building. A one-stop shop for books, supplies, snacks, and Lawrence Tech apparel and gifts! Textbooks, access codes and study materials are available in store and online at lawrence-tech.bncollege.com, or through the bookstore app (MyCollegeApp).

Fall and spring semester hours are Monday through Thursday, 9 a.m. –7 p.m., Friday, 9 a.m. – 2 p.m, and select Saturdays for special events. For information on extended times, visit lawrence-tech.bncollege.com. For questions, contact the store via email at bkslawrencetech@bncollege.com or by phone, 248.204.3030.

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 Office 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
The Café, located on the second floor of the Buell 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 Building atrium, which offers grab-and-go salads and sandwiches, snacks, and beverages.

Lawrence Tech offers residential and commuter meal plans and LTU Dollars. Meal plans are used at the Café. LTU Dollars work like a debit card and can be used at all Lawrence Tech dining locations and the Jet's Pizza on 9 Mile Road. **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. Career Services provides a wide variety of services and programs that, beginning as soon as freshman year, can help students develop their career plans and establish goals by identifying their abilities, values, and interests along with targeting occupations that reflect those skills, interests, and career goals.

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. Handshake also allows students to create professional profiles, upload their resumes, follow employers' news feed, register for career fairs and expos, research employers, and much more.

The Office of Career Services is located in the A. Alfred Taubman Student Services Center (C404), 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.™ A uniform suite of up-to-date industry-standard software applications with an industry retail value of more than $75,000 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. In addition to providing access to industry-standard software and hardware, the LTuZone™

includes onsite and remote technical support of its software and hardware, allowing students to focus on their learning.

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 for classes, payment of a $500 refundable 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 (O & R). Identically configured 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 Workspace for Education, including 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 students, faculty, and staff with educational services of the highest quality. The pursuit and achievement of the Lawrence Tech 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 users and LTU information. Policies and resulting technologies reflect the University goal to protect an individual's physical and information safety. To assist and ensure such compliance, Lawrence Technological University established the Computer and Network Use Policy. 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 printLab, and in the atrium of the Buell Building. Black-and-white prints are free. There is a charge for color printing.

The Architecture printLab provides students and faculty with an array of services, ranging from wide-format and three-dimensional printing, and support studio spaces that facilitate trimming/assembly, screen printing, and bookmaking projects. Specialized printers produce large-format CAD plots, as well as photo-quality prints and posters. After hours, 24/7 self-service laser printing is available for both color and black-and-white documents on publicly accessible printers located in the lounge area adjacent to the printLab Print Desk. In addition, there are also work surfaces, paper cutters, rulers, and other basic office tools.

Lawrence Technological University

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
C201	AAC
E152	Engineering Building Lounge
M113A	Library
APTE1	East Hall
APTN1	Donley Residence Hall
APTS	South Residence Hall
APTL1	Reuss Residence Hall
J347	STEM Building
S202	Arts and Sciences Lounge
CoAD-North_B&W	Architecture North wing
printLab_B&W-Laser	Architecture printLab

Note: In order to save paper and cut costs, print jobs will not print until they are released. All public printers have a release station with instructions.

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

> Buell 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 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" x 11"; $1/page for 11" x 17"
• Payment is available through PayPal or directly at the device by payment card
• You can print Microsoft Office documents, Adobe documents, and image files (.jpg, etc.)

Help Desk
The Help Desk, located in the A. Alfred Taubman Student Services Center (C203), provides 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 by appointment. For repairs or diagnosis taking longer, a loaner laptop may be 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.

Lawrence Technological University

The Help Desk 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 ltu.edu/ehelp.

MY.LTU.EDU
Lawrence Tech's comprehensive service portal, my.ltu.edu, offers an expanding variety of resources and conveniences. Among them is Canvas, the University's learning management system, a comprehensive and flexible eLearning software platform that is used to help facilitate learning. 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 and class lectures for immediate retrieval anytime, anywhere. Other features available through Canvas are discussion boards for posting questions to and receiving answers from other students and the professor in the class; the ability to submit assignments to professors; access to Zoom for synchronous communication; 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:
Master of Architecture
Master of Business Administration (online concentration: Cybersecurity and Project Management)
Master of Science in Civil Engineering
Master of Construction Engineering Management
Master of Engineering Management
Master of Science in Industrial Engineering
Master of Science in Information Technology (online concentration: Cybersecurity and Project Management)
Graduate Certificate in Cybersecurity
Graduate Certificate in Project Management
Dual Master of Business Administration and Master of Engineering Management
Dual Master of Business Administration and Master of Architecture
Master of Urban Design
Building Information Modeling (BIM) Certificate
Geographic Information Systems (GIS) Certificate

Other degree and certificate programs are under development; students should visit LTU Online (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 (HLC) 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 ensure 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
The Office coordinates annual social events to encourage students to interact with other students on campus. Popular programs include the fall semester New Student Convocation, Freshman orientation, movie nights, and off-campus trips. Students can also enjoy Homecoming and a host of sporting events.

Student Code of Conduct/Academic Honor Code 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 ltu.edu/myltu/code-conduct.asp. The Academic Honor Code, which is Section C.1 of the Student Code of Conduct, can be found at ltu.edu/myltu/honor-code.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.

CLINICAL COUNSELING SERVICES
Lawrence Technological University is committed to the academic success, personal development, and well-being of all students. While acquiring a college education is exciting and challenging, it can also be stressful. LTU Offers free Clinical Counseling services to all registered students.

The Office of Clinical Counseling is located within the Office of the Dean of Students, C405. Additional information can be found at lut.edu/counseling. Contact us at clinicalcounseling@ltu.edu, or 248.204.4100.

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 allow 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 based on medical documentation and determined on an individual basis.

For additional information on eligibility for services, accommodations, and student responsibilities, visit ltu.edu/myltu/disability.asp 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.

DIVERSITY, EQUITY, and INCLUSION (ODEI)
The Office of Diversity, Equity, and Inclusion (ODEI) aims to foster and cultivate a culture of belonging and engagement through programming, research, resources, and courageous dialogue. All while supporting our community to be solution-focused on issues of social justice, equity, and access. ODEI is located in the A. Alfred Taubman Student Services Center (C405) as a part of the Dean of Students suite and is a collaborative unit that serves faculty, staff, students, and alumni of

Lawrence Tech has four residence halls: Edward Donley Hall, South Hall, Lloyd E. Reuss Hall, and LTU's newest residence, East Hall, which is reserved for first-year residents. East Hall features furnished community-style rooms that accommodate two students. The building has communal laundry and two community style bathrooms on each floor. Reuss Hall is home to our sophomore housing and also features furnished community-style rooms that accommodate two students.

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. Reuss, Donley and South are reserved for upper-class students only.

Anyone seeking on-campus housing should complete a Housing Application and Contract via their Admissions account and pay the application fee. 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 (ID 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 LTU 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. Identification cards are provided to currently enrolled Lawrence Tech students.

INTERNATIONAL PROGRAMS
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.

International Programs provides a mandatory and comprehensive orientation, held the week before classes begin each semester, to support international students in acclimating to their new environment.

The Office of International Programs is located in the A. Alfred Taubman Student Services Center (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.

Study Abroad
Lawrence Tech offers a wide variety of opportunities for students looking to study abroad for a full semester or participate in other international experiences that range from one week to an entire summer. Study Abroad is a wonderful opportunity to explore a new country and a new culture. Many students take advantage of their extra time to also visit places outside of their host city or even host country.

Study Abroad programs include opportunities in Germany, France, England, and Italy, to name a few.

Going overseas for a summer term or a semester is the best way to develop as a leader with a global view. There is no better way to understand and appreciate the history, culture, and language of foreign society than to participate in an international experience opportunity.

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 Building, one flight below the atrium, and boasts an attractive indoor garden area with 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 selected to enhance the University's curriculum areas. All resources are available both on and off-campus. Collection strengths include engineering, technology, architecture, and business. The library also maintains graduate theses and dissertations

from LTU graduate students. Among the library's unique resources is the 3,000-volume working library of the late renowned architect Albert Kahn.

The professional librarians, on duty during all scheduled hours – except during late-night student study 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 maximizing use of library resources. Students have full access to the stacks for browsing and independent research and can always count on getting personalized research assistance from a reference librarian. The library also participates in a 24/7 chat reference service, so access to a librarian is available whenever the library is not open.

While the library's discovery catalog, TechCat, is available to the public on the Lawrence Tech website (ltu.edu/library), its premium content, including databases and full-text material tailored to serve the needs of Lawrence Tech curricula, is included online via password-protected links. Students can access this content using their campus network log-in information whether on- or off-campus. The library hosts 1,167,000 print and electronic materials including 109,500 print and electronic journal titles.

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 in order to get help in finding the best available materials.

Library Account
All students can create a special library account that may be accessed through the "My Account" feature of the library's online catalog (ltu.on.worldcat.org). Once logged in, students may place requests directly from TechCat, review their account for items checked out, view fines, save searches and titles to a folder, share the folder, or send to RefWorks citation manager. For questions about how to use this feature or for any other questions, contact the library at 248.204.3000, or email library@ltu.edu.

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
It is LTU policy that all found articles be turned into the Campus Safety office at suite G102 in General Services Building (#17). Campus Safety delivers all found University-issued laptop computers to the Help Desk Center at suite C203 in the A. Alfred Taubman Student Services Center in the Buell Building (#5). For all other items, Campus Safety attempts to contact their owners if they are both identifiable and members of the LTU community. Found items are discarded after remaining in storage at the Campus Safety office for 30 days.

Lawrence Technological University

MOTOR VEHICLES AND PARKING
Vehicle Registration
Members of the LTU community **must** register and display LTU Parking Permits in their vehicles to park on LTU's campus. This system was put in place to ensure that students, staff and faculty have adequate parking on campus, and that the lots are used by authorized personnel only. There is **no charge** for the Parking Permit. To obtain a Parking Permit, visit Campus Safety's office in suite G102 in the General Services Building (#17). The following items are required to receive a Parking Permit:

- A valid driver's license
- A valid vehicle registration
- Banner ID card
- Completed vehicle registration form. This may be found at the Campus Safety office or online at: ltu.edu/campus_safety/parking-registration.asp.

Multiple vehicles may be registered, but each one requires a separate Parking Permit. Members of the LTU community who park unregistered vehicles on LTU's campus may receive LTU Violation Notices or have their vehicles towed at their expense.

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 and may be towed at the owners' expense.

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. Contact the President's office at president@ltu.edu

POSTAL AND PACKAGE SERVICES
The Department of Mail Services is located in suite G100 at the General Services Building (#17). It is open from 7 a.m. – 3 p.m. weekdays and **closed on weekends and holidays**. Mail Services receives all incoming campus mail and packages and delivers them to designated, secure locations around campus. For residence halls, mail and packages are delivered to their respective information desks. Those expecting mail at other buildings or offices on campus should contact Mail Services directly to confirm the delivery location for their mail and packages. Mail Services may be reached by phone by dialing 3718 from any campus phone or 248.204.3718 from any other phone. Mail Services may also be reached by email at ltu_mail@ltu.edu.

The United Parcel Service (UPS) has an outbound package kiosk located outside of the General Services Building (#17) on the southeast side of the building near the garage door.

RAFFLE OR CHARITABLE GAMING EVENT GUIDELINES
The Michigan Bureau of the State Lottery Charitable Gaming Division (State Lottery) (michigan.gov/cg/) generally does not qualify the following for licensing: teams, classes, clubs, and other groups sponsored by the school or school district. Applications in support of these functions should be submitted in the name of the school or school district.

Also, college fraternities and sororities are specifically prohibited under Act 382 of the Public Acts of 1972, as amended, for conducting gambling activities in Michigan.

Any student organization requesting to host a gambling tournament or raffle must first contact the Office of Student Life to receive guidance on completing the appropriate forms and applications. The student organization is responsible for submitting the application(s) and/or form(s) to the State Lottery along with the required application fees. Additionally, the student organization must obtain a signed letter from the director of Student Life summarizing and approving the raffle or charitable gaming event.

The application review process will take approximately six (6) weeks for the State Lottery to complete. Students should seek guidance from the Office of Student Life approximately eight (8) weeks prior to the event. If you have any additional questions or if you would like to view the sample forms from the State Lottery, please follow the links contained within this section.

michigan.gov/documents/cg/BSL-CG-1451_605560_7.pdf
Michigan.gov/documents/cg/BSL-CG-1655_500424_7.pdf

RALLIES/MARCHES/PROTESTS
Student organizations, student groups, and/or individual students who desire to hold a rally, march, demonstration, and/or protest on the LTU campus should contact the Office of Student Life two (2) days prior to holding the event.

The professional staff member for the Office of Student Life will inform the representative student for the various organization, group, or individual what the requisite steps are in order to complete the necessary forms for space reservation on campus, use of public-address equipment or amplified sound, and notification to Campus Safety.

SAFETY AND SECURITY
A safety team patrols LTU's campus 24 hours a day. No metropolitan area is immune from criminal activity. As such, all students should take an active role in assuring their personal safety. Students should immediately report any suspicious persons, objects or activity to Campus Safety.

The Department of Campus Safety is open 24 hours a day and located in suite G102 at the General Services Building (#17). Campus Safety may be reached by phone by dialing 3945 from any campus phone or 248.204.3945 from any other phone. For emergencies, dial 9-1-1 from any campus phone to be connected to Southfield emergency services. For incidents and reports of a non-urgent nature, Campus Safety may be reached by email at ltu_safety@ltu.edu.

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 ltu.edu/annual-security-report.

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

SPIRIT ROCK
The Spirit Rock, located between the Architecture and Design building and Donley Hall, exists to provide students and student organizations the opportunity to express their spirit and pride in Lawrence Technological University and various LTU-sanctioned student organizations. To maximize this opportunity, students are expected to respect the following regulations:

- The rock is not to be moved
- Derogatory, profane, or obscene words, images, 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
- With the exception of painting, the physical condition of the rock shall not be altered in any way that will change its shape, size, or orientation

STUDENT LIFE
The Office of Student Life, located on the fourth floor of the A. Alfred Taubman Student Services Center (C404), provides programs and services for the entire LTU community. The Student Life team coordinates a variety of opportunities for students to become involved on campus, in the City of Southfield, and throughout the Metropolitan Detroit area. The office's core mission is student success and the office is here to provide a variety of opportunities that encourage growth as a student

and a leader while at LTU. Engagement beyond the classroom will enhance the collegiate experience and advance success after graduation.

Students are encouraged to connect with each other in the variety of student organizations, participate in a leadership programs, or serve the community through volunteering. The Office of Student Life helps students flourish as leaders and community members.

Student Life seeks to advance LTU's strong commitment to diversity in assisting in the recruitment, retention, and graduation of all students, and in particular, historically underrepresented groups on our campus (students of color, women, religious and ethnic minorities, and LGBTQ+ students), by developing and implementing strategies that support students in the attainment of academic excellence and social success.

Student Life 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; and discussions and speakers who focus on relevant social, cultural, and academic issues.

The office is responsible for planning campus wide events such as Welcome Week, Homecoming, and De-Stress Fest as well as freshmen orientation weekend, called First Year Ignite.

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

First Year Ignite
Homecoming Week
Programming that promotes community on campus and in the City of Southfield
Student Government
Greek Life
Student Organizations
Welcome Week
Destress Festival (Fall and Spring)

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 Dean of Students; Academic Achievement Center; Campus Dining; Career Services; Clinical Counseling Services; Disability Services; Diversity, Equity, and Inclusion (ODEI): International Programs; Student Life; 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 Student Affairs. Events, programs, and services provided through these offices are designed to enhance student involvement and student leadership development.

Lawrence Technological University

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 Canvas, 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 Canvas, students' Lawrence Tech email accounts are visible to others within the class. Students can change their default email address within Canvas to route their Canvas email to another account.

Canvas 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 Canvas.

STUDENT INSURANCE

Students needing health insurance can go to the official site of the Affordable Care Act (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 nssi.com.

STUDENT LOUNGES

Student lounges are located in the fireplace area of the Engineering Building and in the lobby of the Science building. The atrium of the Buell Building provides a spacious area for socializing, and an Einstein Bros. Bagels and P.O.D. (Provisions on Demand), 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.

Lawrence Technological University

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 ltu.edu/transit.

VETERANS

LTU recognizes the contributions of the members of the Armed Forces. As a show of our appreciation military and veteran students are eligible for a reduced tuition rate. Your service may entitle you to several VA educational benefits. The University is approved for admission of students receiving veteran subsidies. Students who are currently serving, veterans, or dependents of such are encouraged to communicate their status during the admissions process and/or to their advisor or military support team member on their campus.

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 (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 Bill® benefits are expected to maintain Satisfactory Academic Progress (see ltu.edu/financial_aid/sap_policy for details).

As part of the Veterans Benefits and Transition Act of 2018, section 3679 of title 38, United States Code (Public Law 115-407) was amended and effective August 1, 2019, the State Approving Agency (SAA), or the Secretary when acting in the role of the State Approving Agency, shall disapprove a course of education provided by an educational institution that has in effect a policy that is inconsistent with the areas below.

LTU will permit any covered students to attend or participate in the course of education during the period beginning on the date on which the individual provides to the educational institution a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 (a "certificate of eligibility" can also include a "Statement of Benefits" obtained from the U.S. Department of Veterans Affairs (VA) website – eBenefits – or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

- The date on which payment from the VA is made to the institution
- 90 days after the date the institution certified tuition and fees following the receipt of the Certificate of Eligibility

LTU will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement funding from VA under

chapter 31 or 33. In addition, LTU may require the covered individual to take the following additional actions:

- Submit a certificate of eligibility for entitlement to educational assistance no later than the first day of a course of education
- Submit a written request to use such entitlement
- Provide additional information necessary to the proper certification of enrollment by the educational institution

Students receiving Veterans Administration Educational Assistance benefits are expected to maintain the same standards of academic progress and social conduct as all other students. LTU provides information about students receiving Educational Assistance benefits to the Veterans Administration in accordance with federal mandate.

The State Approving Agency (SAA) has imposed the following requirements on LTU in order for students to receive veteran's benefits:

1. Satisfactory grade (cumulative GPA and probation): All students receiving veteran's benefits must comply with the Academic Probation and Suspension guidelines of the University. A student who placed on probation may not be continued on probation more than two semesters in order to raise the cumulative GPA to that required for graduation and come off probation. If the student fails to come off probation, the U.S. Department of Veterans Affairs (USDVA) will be notified in writing.
2. Withdrawal and last date of attendance: The veteran's certification office will inform the USDVA of any change in semester hours and dates of attendance.
3. Credit for previous training: All students who are requesting veteran's benefits when enrolling at LTU will be given credit for previous training, where appropriate. The total length of the training program will be reduced proportionately. The student and the USDVA will be advised in writing of the credit given to the student and the appropriate reduction in the total length of the program. All students receiving veteran's benefits must have transcripts and other documents showing credit for previous training on file in the Registrar's Office by the end of the first semester of enrollment. Failure to do so will result in no further certification for veteran's benefits until those transcripts have been provided.

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 Technological University from 1934 to 1964), turned a dream of preparing students for leadership in the new technical era into reality.

For 90 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 of Trustees 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 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 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 presided over the construction of the A. Alfred Taubman Engineering, Architecture, and Life Sciences Complex, Home of the Marburger STEM Center; and the Lloyd E. Reuss and East Residence Halls. He also launched the Global Village program to help all LTU students learn more about other cultures and the interconnectedness of the world economy.

Tarek M. Sobh was appointed as the eighth president of Lawrence Technological University and assumed office on January 1, 2022. Sobh, a licensed professional engineer, served as vice president of academic affairs and provost at Lawrence Tech from 2020 to 2022. Sobh is a noted scholar who has authored more than 250 refereed journal and conference papers and book chapters, in addition to 27 books. He serves or has served on the editorial boards of 18 journals, and has served on the program committees of over 300 international conferences and workshops in the robotics, automation, sensing, computing, systems, control, online engineering and engineering education areas. Sobh has presented more than 150 keynote speeches, invited talks and lectures, colloquia and seminars at research meetings, university departments, research centers, and companies. His background is in the fields of robotics, computer science and engineering, control theory, automation, manufacturing, AI, computer vision and signal processing.

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 admissions 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 3,000 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. As of 2021, Lawrence Tech is continuing the legacy of Specs Howard School of Media Arts and is offering certificates through the Specs@LTU program.

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.

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 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.

Lawrence Technological University

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 Technological University considers, in addition to the applicant's previous academic record, factors that demonstrate an aptitude for successful study.

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

FRESHMAN ADMISSION REQUIREMENTS
To begin the admission process, apply online at 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. $30 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. Essay – Essay prompt: Sample topics could include information about your career goals, why you are choosing a particular major, or why you are choosing to apply to Lawrence Tech. **Optional** for Fall 2022 and Fall 2023: An official copy of either American College Test (ACT) or Standard Achievement Test (SAT) scores. Send the scores to Lawrence Tech, school code 2020.

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

PLACEMENT ASSESSMENTS
All entering freshmen must take placement assessments appropriate for their majors. Examination topics include biology, chemistry, English, mathematics, physics, and computer programming.

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.

DEVELOPMENTAL STUDIES
High school graduates and transfer students who meet admissions requirements but lack adequate proficiency in courses foundational to their chosen degree may be admitted subject

to the satisfactory completion of appropriate developmental courses. College-level courses in basic algebra, intermediate algebra/geometry, precalculus, chemistry, physics, biology, and composition 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 all developmental courses have been satisfactorily completed.

TRANSFER STUDENT ADMISSION REQUIREMENTS
To apply for transfer admission to LTU, students must have graduated from high school, or have a high school diploma, and have completed at least 30 credit hours of college-level coursework post high school graduation. In order to be considered for admission to Lawrence Tech, transfer students must submit the following:

1. Completed Application for Undergraduate Admission (ltu.edu/apply)
2. $30 Application Fee (non-refundable)
3. Official transcripts from each previously attended institution, including high school
4. If transferring into the architecture and design programs, students are required to submit a portfolio to receive transfer credit for design courses.

Lawrence Tech has partnered with Transfer Evaluation System (TES) to provide a database for prospective students to view previously evaluated courses. Transfer guides and articulation agreements for Michigan colleges and universities are available 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 previously evaluated courses, LTU transfer guides and articulation agreements can be viewed at ltu.edu/futurestudents/transfer.

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, provided the courses completed are deemed acceptable to satisfy degree requirements in the student's program of study.

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.

Developmental courses are not transferrable for credit. A course is considered developmental if the corresponding LTU course number begins with a zero (0) or is prerequisite to the lowest-level course in the same subject area required within the student's program of study.

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 Office of 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.)
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 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. Essay prompt: Sample topics could include information about your career goals, why you are choosing a particular major, or why you are choosing to apply to Lawrence Tech
3. $30 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. (wes.org)
6. Official English proficiency test scores (TOEFL, IELTS, or Duolingo English Test). Minimum score requirements are as follows:
   a. TOEFL: 60
   b. IELTS: 5.5
   c. Duolingo English Test: 95
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

SPECS@LTU

Lawrence Tech is continuing the legacy of Specs Howard School of Media Arts and is offering certificates through the Specs@LTU program. Applicants to the program need to complete the application dedicated to Specs students. In addition to the online application, applicants need to submit an unofficial copy of high school transcripts that includes a graduation date. Applicants that have attended a college or university will need to submit those transcripts as well.

ENGLISH AS A SECOND LANGUAGE (ESL)

Lawrence Tech has partnered with Language Center International (LCI) to provide English language training to students that have not met the minimum English proficiency requirements. Upon successful completion of the ESL program at LCI, students will be considered to have the required proficiency level and will be eligible to enroll in their intended program at LTU.

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 who change to a significantly dissimilar major may elect to reset their GPA. Students may elect to reset their GPA one time while studying at LTU and only in the first instance of changing majors. If selecting the

one time GPA reset, **only grades of "C" or higher may be transferred into the new major.** The academic history of all students selecting to change majors will be preserved, but will appear on a separate part of the academic transcript.

Students may find additional details and policies regarding the elective GPA reset, including a listing of dissimilar majors, in the LTU Change of Curriculum form. Students should contact the chair or director overseeing their proposed major 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 upcoming.ltu.edu.

Lawrence Technological University

Tuition and Fees
Lawrence Technological University sets tuition rates with the 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 ltu.edu/registrars_office/tuition-fees.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. Use a credit card via BannerWeb at my.ltu.edu
2. Pay with cash, check, money order, or credit card at the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center
3. Mail a check, money order, or appropriate credit card information
4. Phone (248.204.2280) or fax (248.204.2228) appropriate credit card information to the DTE Energy One-Stop Center
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.

Lawrence Technological University

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 ltu.edu/registrars_office/calendar_final_exam.index.asp.

After the Drop/Add period, no refunds are provided. 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 AND FEE APPEAL PROCESS
Students who withdraw from classes after the tuition refund deadline and believe, based on the conditions outlined on the registrar's website (Tuition and Fee Appeal Form) that they may qualify for a refund, 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 or prior to the student's official withdrawal from the course. Student are advised to discuss the implications of withdrawal on Financial Aid, Veteran's Benefits, international status, athletic eligibility, housing, and other concerns before submitting an appeal.

The DTE One-Stop Center will prepare a packet of information for the Tuition and Fee 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 Committee (comprised 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.

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.

Lawrence Technological University

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 99% of all students at Lawrence Tech receive some form of financial aid. Grants, scholarships, loans, and work-study eligibility vary by student, depending on need, merit or ability, and availability of funds.

For additional information on federal, state, and institutional aid programs and instructions on how to apply, visit the financial aid website at ltu.edu/financial_aid. Most initial awards are based on the assumption of full-time attendance (twelve 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 ltu.edu/financial_aid/sap_policy.

Students who audit classes, or 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).

Financial assistance at Lawrence Technological University 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 (FAFSA). The primary application piece required for federal, state, and institutional financial aid consideration, the FAFSA can be completed online at studentaid.gov; it is also accessible at ltu.edu/financial_aid/fafsa.asp.

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 additional documentation 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, or emailed to enrollmentservices@ltu.edu 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/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 offer notice is prepared and sent.

New students at Lawrence Tech are notified of their financial aid offer beginning in December. Returning students are notified of their financial aid offer beginning in late May, once final grades are posted then Federal and State aid is processed.

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 99% of the University's students receive some form of financial assistance, which totals more than $48 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.

GUIDELINES
Every federal aid program has its own specific requirements, but all share the following general requirements.

- For need-based programs, you must have financial need. Your need is determined by the Free Application for Federal Student Aid (FAFSA).
- In order to receive any aid, you must be enrolled at least half-time (6 credits for undergraduate programs, 3 credits for graduate programs) in an eligible program.
- Certificate, Special and guest students are not eligible for financial aid.
- If you have graduated from LTU and are not in a new degree program but continue to register for courses, you are not eligible for financial aid. You must be in a new degree program, and registered at least half time to be eligible for financial aid.
- You must be a U.S. citizen or eligible non-citizen to receive federal student aid. See the definition from the federal regulation.
- A valid Social Security Number is a necessity.

- Male students between the ages of 18-25 must be registered with the Selective Service. The easiest and fastest way for a man to register is to register online.
- If you owe a refund on a federal grant or are in default on a federal education loan you are ineligible.
- The student must make satisfactory academic progress (SAP) as defined by the institution's SAP policy. Read full policy on Satisfactory Academic Progress here: ltu.edu/financial_aid/sap-policy.asp.

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 $2,800 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 merit 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 ltu.edu/financial_aid/grants and complete the Free Application for Federal Student Aid (FAFSA) at studentaid.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 state funding 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, test scores are not required to receive scholarships; students who are unable to submit standardized scores will not be disadvantaged in the merit scholarship process. However, if you have already taken or plan on taking the SAT or ACT and would like to submit test scores, your test scores will be considered supplemental information. Lawrence Tech also provides scholarship opportunities for transfer students. In order for transfer students to be eligible, they must have a GPA of 2.5 or higher.

To assure that all students receive maximum consideration for all types of financial aid including Federal, State and Institutional funding, students must complete the financial aid application process (studentaid.gov).

Students will be notified in writing of their eligibility and the terms and conditions of each scholarship. Most scholarships have a maximum eligibility period of four years, or eight semesters, and require full-time attendance. The George and Russell Lawrence 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 in order for them to be considered for renewal. The Office of Financial Aid reviews each scholarship recipient's GPA and determines their continued eligibility.

For the most recent detailed listing of all Lawrence Tech scholarships, go to [ltu.edu/financial_aid/scholarships.asp.](ltu.edu/financial_aid/scholarships.asp) No additional application is required to be considered for scholarships. To be eligible, students must be admitted to Lawrence. In addition to merit scholarships once a student has completed a year at LTU they can then apply for PDS (Private Donor Scholarships). This application opens October 1 and closes January 31 for the following academic year ltu.edu/financial_aid/scholarships.asp#tab2.

It is recommended that freshman complete their admission applications before March 1 and transfer students before June 1. 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 qualify. These scholarships are given for eight semesters if the student maintains the scholarship requirements.

University Honor Scholarships
Lawrence Tech annually awards more than 250 University Honor Scholarships for $10,000 per year to first-time students who qualify. The scholarship is given for eight semesters if the student maintains the scholarship requirements.

Lawrence Tech Trustee Scholarships
Lawrence Tech annually awards an unlimited number of $6,000 per year Trustee Scholarships to first-time students who qualify. The scholarship is given for eight semesters if the student maintains the scholarship requirements.

Lawrence Tech Transfer Scholarships

Lawrence Technological University

Lawrence Tech offers a number of $4,000-$14,000 annual scholarships to transfer students who qualify. Students must be admitted by June 1 in order to qualify.

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 ltu.edu/financial_aid/scholarships.asp#tab2 from October 1 through January 31 for scholarship opportunities beginning the following fall.

LOANS FOR STUDENTS
Federal Direct Loans
The Federal Direct 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 look up your loan history online at studentaid.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 Loan – Undergraduate students must demonstrate financial need to qualify for the Subsidized loan. The federal government pays the interest on a subsidized 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 ltu.edu/financial_aid/direct-subsidized-loan.asp for further information.

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

DL Maximums Per Year

Student Level and Dependency Status	Maximum DL (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 DL (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 borrowers can apply for a deferment. Visit studentaid.gov for additional information.

Alternative Loans
In addition to the direct loans, undergraduate students have access to a variety of alternative loans. The application process and terms for alternative loans vary by program and credit worthiness and may require a co-borrower. Visit ltu.edu/financial_aid/loans for additional information.

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 $6,495 annually and funds are available only for undergraduate students pursuing their first undergraduate degree. The application for the Pell Grant is the Free Application for Federal Student Aid (FAFSA), which is used to determine the family contribution and eligibility 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 studentaid.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 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 in the co-op 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 advisor 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

Lawrence Technological University

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 ltu.studentaidcalculator.com/survey.aspx.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 ltu.edu/financial_aid/sap_policy.asp for information regarding the appeal and renewal procedure when standards of progress are not met.

U.S. Citizenship
Students must be U.S. citizens or eligible non-U.S. citizens as defined by the U.S. Department of Education to qualify for financial aid programs. Federal regulations and University policy significantly limit the types of financial assistance for international students.

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 documentation from its students for verification. Students refusing to provide documentation information will be denied financial aid. 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 additional documentation prior to the review of their application. If students are selected, they will be notified by the school that they must provide the

needed information. This information should be turned in 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 processes as smooth as possible. Generally speaking, from the time the FAFSA is submitted to the time a financial aid offer is prepared and sent, it can take between two to six weeks.

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 Direct Subsidized, Federal Direct Unsubsidized, and Federal PLUS 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) 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 ltu.edu/registrars_office/tuition-fees.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.

Students must also terminate any work-study employment. If students have received any federal loans, they should contact the lender and complete an exit interview. Students' eligibility for financial aid will be determined, or recalculated, by the use of federally mandated procedures which may affect the aid already applied toward their account or previously refunded to them. Depending on when the withdrawal occurs, students may be required to repay all or part of the aid received.

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 (ltu.edu/financial_aid/title-iv-funds.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.

Return to Title IV Policy
Effective with the Fall 2000 Term, the federal government changed how federal financial aid is determined for students who withdraw from all their classes. If a student receiving Title IV funds completely withdraws from classes through 60% of the term, the University is required to determine how much of the financial aid was earned up to the time of withdrawal. Unearned Title IV funds must be returned by the University and/or the student to the federal government. This situation could result in the student owing aid funds to the University, the government or both.

How will my financial aid be calculated after I withdraw?
The federal formula requires return of Title IV aid if the student received federal financial assistance in the form of a Pell Grant, Supplemental Educational Opportunity Grant, Federal Perkins Loan, Federal Direct Student Loans or PLUS Loan, Teach Grants, or Iraq/Afghanistan Service Grants, and withdraws on or before 60% of the term.

To determine the amount of aid the student has earned up to the time of withdrawal, divide the number of calendar days the student attended classes by the total number of calendar days in the term. Scheduled breaks of more than five days or more are excluded. The percentage derived is then multiplied by the total federal funds that were disbursed (either to the student's account or to the student directly by check) for the term. This calculation determines the amount of aid earned by the student, which he/she may keep (for example, if the student attended 25% of the term, the student has earned 25% of the aid disbursed).

How do you know if I stop attending?
For financial aid purposes there are two types of withdrawals: Official and Unofficial.

Official – an official withdrawal occurs when the student has notified the One-Stop of his/her intent to withdraw from LTU. For the policy and procedure of Official Withdrawals, review the LTU Catalog, Academic Policies section. Contact the One-Stop for more information.

Unofficial – an unofficial withdrawal occurs when the student has not provided official notification of withdrawal to LTU.

Students who wish to drop or withdraw from a course or courses must do so online through Banner Web. The date of the drop or withdrawal will be the date that the student completes the process on Banner Web. Instructors notify Enrollment Services if a student stops attending or never attended a class. For online courses, non-attendance is lack of participation in the online courses. Enrollment Services contacts the student by email informing them "we have been notified of non-attendance." The student has ten 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 any action, a "WF" or "WN" grade is issued to the student. The last date of attendance as reported by the instructor is recorded as a requirement for Financial Aid processing of Return to Title IV. If it has been determined that a student has unofficially withdrawn, the Return to Title IV calculations will assume 50% of the term completed-unless documentation supporting the last date of academic activity can be provided by the student if it verifies a later date of attendance than determined by LTU. Documentation supporting the last date of academic activity should be brought to the One-Stop. See below for examples of academically-related activities.

Definition of an academically related activity
Examples of LTU academic-related activities include but are not limited to physically attending a class where there is an opportunity for direct interaction between the instructor and students. Proof of participation:

- Exams or quizzes
- Tutorials
- Computer-assisted instruction
- Completion of an academic assignment, paper or project
- Participating in online discussion about academic matters
- Initiating contact with a faculty member to ask a question about the academic subject in the course

When is my aid returned?
The unearned amount (total aid disbursed less the earned amount) must be returned to the federal government as soon as possible but no later than 45 days from the determination of the withdrawal by the University. A post withdrawal disbursement of funds will be made to the student if the amount disbursed to the student is less than the amount the student earned, and for which the student was otherwise eligible. He/she is eligible to receive a post withdrawal disbursement of the earned aid that was not received. The University will notify the student if this situation exists within 30 days of the date of determination of the withdrawal.

Order of Return of Title IV Funds
Funds that are returned to the federal government are used to reduce the outstanding balances in individual federal programs. Financial aid returned (by the University and/or the student or parent) must be allocated in the following order:

1. Federal Unsubsidized Direct Loan

2. Federal Subsidized Direct Loan
3. Federal Perkins Loan
4. Federal Direct Plus (Parent) Loan
5. Federal Pell Grant
6. Federal Supplemental Educational Opportunity Grant (FSEOG)
7. Other Federal Loan or Grant Assistance Teach, Iraq/Afghanistan Service Grants

Once a determination of earned Federal aid is made, the Office of Financial Aid will notify each affected withdrawn student of eligibility.

- Loans disbursed are payable under the terms and conditions as outlined in the promissory note. Most Direct Loan borrowers will enter repayment six months after withdrawal unless they begin classes on a half-time basis (6 credits undergraduate/3 credits graduate) before the end of their six-month grace period.

Eligibility for Michigan Competitive Scholarship/Michigan Tuition Grant funds are calculated based on a formula provided by the Michigan Office of Scholarships and Grants.

University funds are calculated using the same percentage used in the federal calculation for Title IV funds. University funds are applied only if there is a balance owed by the student to the University.

It is important to realize that a key component of satisfactory academic progress is course completion. A total withdrawal contributes no completed credits to an academic transcript. Absence of course completion during a term could be viewed negatively in positive progress towards degree completion.

Questions and concerns should be directed to the One Stop Center at 248.204.2280 or enrollmentservices@ltu.edu. The Office of Financial Aid encourages all students to meet with their academic advisor and to take advantage of the resources offered in the Counseling and Support Services Office before withdrawing.

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

Graduating 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.

Lawrence Technological University

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:

	LTU semester hours earned
Freshman	0–29 credits
Sophomore	30–59 credits
Junior	60–89 credits
Senior	90+ credits

CREDIT HOUR

Lawrence Tech's courses are based on a semester system, and course credits are based on the amount of classroom, lab and/or studio hours within each specific course.

The United States Department of Education and the Higher Learning Commission require that its affiliated institutions have a policy for assigning credit hours for all types of courses, disciplines, programs, credential levels, formats, regardless of modality.

Academic Calendar

LTU follows the standard academic calendar, 30 weeks of instruction for the academic year, with semesters 15 weeks in length, fall and spring, excluding designated university closing periods. Summer sessions and accelerated (short) sessions/courses vary in length.

Credit Hour Definition

LTU's definition of a credit hour complies with federal and accreditation expectations and provides consistency throughout the University. LTU follows the Carnegie unit of measure for assigning credits to Its undergraduate and graduate academic courses:

1. One credit is equivalent to 50 minutes (minimum) of direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately 15 weeks. However, the U.S. Department of Education has made clear that it does not intend to prescribe "seat time" minimums.

2. An equivalent amount of work is required in courses and academic activities where direct Instruction is *not* the primary mode of learning. A credit hour can also be an **equivalent** amount of work for other activities as required in direct instruction, or the equivalent amount of work for other academic activities as established by the University including but not limited to internships/clinical experiences, directed studies, laboratories, studio/work, and other work leading to the award of credit hours. Credits are awarded on the basis of documented learning objectives, expected learning outcomes, and student workload expectations within a specified period of academically engaged time.

3. Hybrid and online courses require an **equivalent** amount of instruction and student work as required by in-person courses. Regardless of mode of instruction, LTU courses should be consistent in terms of quality, assessment, learning outcomes, requirements, etc. as courses offered face-to-face. Courses must demonstrate active academic engagement through interactive methods, including but not limited to, synchronous virtual classrooms, interactive content modules and tutorials, group discussions, virtual study/project groups, discussion boards, etc. Simply logging on, either by faculty or students, does not constitute active student learning. Credit hours assigned to a course delivered online must equal the number of credit hours for the same course delivered face-to-face with the same department prefix, number, and course title.

This table provides a per-week "time on task" breakdown for courses based on credit hours and a typical 15-week semester and the Faculty Instruction and Student Engagement Time:

Credits	Faculty Instruction	Student Engagement	Total Faculty/Students minutes per semester
1	50 minutes	120 minutes	2,550 minutes
2	100 minutes	240 minutes	5,100 minutes
3	150 minutes	360 minutes	7,650 minutes
4	200 minutes	480 minutes	10,200 minutes
5	250 minutes	600 minutes	12,750 minutes
6	300 minutes	720 minutes	15,300 minutes

LTU Course Formats and Application of Credit Hour Policy
This credit hour definition applies to all courses at all levels (undergraduate, graduate, and professional) that award academic credit, regardless of format/delivery method, and is based on a 15-week semester. Academic units are responsible for ensuring that credit hours are awarded only for work that meets the requirements outlines in this policy. This policy allows a mandatory examination period to be counted in the minutes of instruction. Any exceptions to this policy must be approved by the Provost.
Accelerated Sessions: Courses offered in periods less than the standard 15-week semester in which the credit hours offered are the same as standard semester courses must maintain the same content and substantive learning outcomes as the standard semester version of the course. These courses must meet the definition of total faculty/student time within the time frame the accelerated version is offered (2550 minutes per credit).

Lecture/Seminar: Course focuses on principles, concepts or ideas, lecture, discussion, and demonstration. A semester credit hour is earned for fifteen, 50-minute sessions of direct faculty instruction and a minimum of two hours of student preparation time outside of class per week throughout the semester. A typical three-credit hour course meets for three, 50-minute sessions or two, 75-minute sessions a week for 15 weeks.

Laboratory: Practical application type courses where the major focus is on "hands on" experience to support student learning (use of equipment, activities, tools, machines generally found in a laboratory). One to two laboratory credits represents a minimum of one hour per week of lecture or discussion plus a minimum of two to four hours of scheduled supervised or independent laboratory work.

Studio: Courses taught as applied study on a private or semi-private basis. Private instruction ranges from 30 to 60 minutes with independent practice and peer collaboration as prescribed by the instructor and required by the course project.

Internship/Field Experience: Courses developed for independent learning and the development and application of Job related or practical skills in a particular discipline. These courses allow for observation, participation, and fieldwork and are generally offered off campus. Internship time includes a combination of supervised time by approved experts outside the University, student assignments, and work products supervised by a University instructor.

Clinical Experience: Supervised experiences where students are afforded an opportunity to apply skills and techniques acquired from assessment and intervention-oriented course material. Number of hours varies by academic program based on clinical placement site hour requirements and student assignments.

Independent Study: Courses that permit a student to study a subject or topic in considerable depth beyond the scope of a regular course. Students meet periodically, as agreed upon with the faculty member, for the duration of the course. University faculty provides guidance, criticism, and review of the student's work. Students demonstrate competency through the completion of a final assessment either by submitting a final paper, project or portfolio, etc. as required by the faculty member. Credit hours are assigned based on the amount of activity associated with the course, faculty supervision, and amount of student outside work.

Thesis/Dissertation: Courses, where students are working on independent projects such as thesis/dissertation, will conform to the standard minimum of 50 minutes of student work per credit hour, per week, throughout the course of the semester or the equivalent amount of work distributed over a different period of time.

Hybrid: A course is considered hybrid (or blended) when it is composed of both online learning and classroom learning and Incorporates the best features of both environments to meet the learning objectives of the course.   Hybrid courses blend specified hours of direct instruction with online interactive methods, that may include but are not limited to, synchronous virtual classrooms, interactive content modules and tutorials, group discussions, virtual study/project groups, discussion boards, etc. to achieve equivalence in terms of quality, assessment, learning outcomes, requirements, etc. as their face-to-face counterpart.

Online (Synchronous): Online courses offered in a synchronous format require students to and faculty to meet virtually for 50-minute sessions of direct faculty instruction and a minimum of two hours of student preparation time outside of class per week throughout the semester.

Online (Asynchronous): In online asynchronous courses occur instructors and students do not meet in the same space at a prespecified time. Online asynchronous courses must be **equivalent** in terms of quality, assessment, learning outcomes, requirements, etc. as courses offered face-to-face with the

Lawrence Technological University

same department prefix, number, and course title. Faculty must demonstrate active academic engagement through interactive methods, including but not limited to, interactive tutorials, group discussions, virtual study/project groups, discussion boards, chat rooms, etc. Simply logging on, either by faculty or students, does not constitute active student learning. Credit hours assigned to a course delivered online must equal the number of credit hours for the same course delivered face-to-face.

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. A D- grade is the minimum grade considered a satisfactory grade at the undergraduate level.

The following grades are **not** computed in the GPA:
CR	Credit
DG	Deferred Grade
EX	Excused Credit
I	Incomplete
IP	In Progress
NC	No Credit
NR	No Report
TR	Transfer Credit
W	Withdrawal
WN	No credit due to non-attendance
X	Audit
ZZ	Transfer Courses in Progress

RECOMPUTATION OF GRADE POINT AVERAGE

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

All records of course attempts remain on a student's official transcript.

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

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 are not eligible for the repeat process.

The University does not guarantee that a course will be offered in the future. Students will not be eligible for recomputation if a course is no longer offered by the University.

A failing grade due to Academic Honor Code Violations may not be eligible for the GPA recomputation process.

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

INCOMPLETE GRADE
An instructor has the right to submit a temporary grade of "I" (Incomplete) in a grade report at the end of the semester under the conditions outlined in the Academic Regulations section of the University undergraduate and graduate catalogs. A written request for a grade of "I" can be initiated by a student to the instructor, or the instructor can make a written recommendation to a student. The conditions and procedures for issuing a grade of "I" are as follows:

1. The instructor has determined that the student has satisfactorily completed the major portion of the course requirements.
2. The instructor has determined that the student is unable to complete the remaining course requirements during the period of the semester due to unanticipated circumstances beyond the control of the student.
3. The instructor has determined that it is possible for the student to work independently after the end of the semester, or the instructor agrees to meet with the student after the end of the semester, to satisfactorily complete the course requirements in a reasonable amount of time.
4. Prior to the end of the semester the student and the instructor have fully completed, signed, and dated the Incomplete Grade Form, as issued by the Office of Enrollment Services. The student and the instructor have fully agreed in writing to the reason for granting the incomplete, the remaining work the student must complete to satisfy the course requirements, and the date when the work must be submitted for final evaluation. The instructor and the student both retain copies of the completed, signed, and dated Incomplete Grade Form

5. Prior to the end of the semester the instructor has submitted the completed Incomplete Grade Form to their department chair or their direct supervisor, who will keep the record on file. The department chair or direct supervisor has submitted the completed Incomplete Grade Form to the Registrar through Enrollment Services.

A student receiving an "I" grade must complete the remaining work according to the written agreement made with the instructor on the Incomplete Grade Form. The student cannot attend the class during a subsequent semester, as a mechanism to fulfill the required completion plan. If course attendance is critical to completing the course requirements, the student needs to register and retake the course again. A grade of "I" is a temporary grade and does not constitute a passing grade for the course. When a student has fulfilled the agreement, the instructor must evaluate the work and issue a final course grade through the Change of Grade Form, as issued by the Office of Enrollment Services. If no grade has been issued by the instructor after a period of one calendar year following the signed date on the Incomplete Grade Form the "I" grade will be converted to an "F" by the Registrar.

GRADE CHANGES
The electronic entry of grades submitted by instructors at the end of each semester is the official record of grades. Changes to any grade may be made only to correct errors in calculation, transcription, or scoring, or to resolve grades of "I." Grade changes, when necessary and merited, are initiated and approved by the instructor through the Change of Grade Form as issued by the Registrar, which is completed and signed by the instructor, and forwarded to the department chair or immediate supervisor. The form is then received, dated, and signed by the department chair or immediate supervisor, and forwarded to the Registrar. 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 (1) semester to address the issue. The appropriate procedure for disputing grades, along with any other aspect of a course, is as follows:

1. The student must first speak with the instructor of the course;
2. If the resolution is not what the student hopes to achieve, the next course of action is to speak with the department chairperson for the course;
3. Again, 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 of the course;
4. Finally, if that 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 no longer 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 audited courses. Full tuition will be charged, and the tuition credit policy applies if the student withdraws. Once classes begin, a student may not change enrollment status from audit to credit or from credit to audit.

Lawrence Technological University

ADDING A COURSE
A registered student may add an open course (or courses) within the registration and initial add/drop period (typically the first week of the semester) via BannerWeb, provided that all prerequisites are satisfied and no holds prevent registration.

In the second week of the Fall and Spring semesters, a student will need to complete the Registration Form and obtain all required department and college signatures before submitting the form to Enrollment Services/ Office of the Registrar. The form is available online at ltu.edu/registrars_office/forms-to-print.asp.

Any changes to a student's schedule are effective on the date changes are entered by the student on BannerWeb. A student is not permitted to attend courses without being officially registered. Permission for a person to attend a class without being registered may be given by the dean of the college or the affected department chairperson on a case by case basis. Instructors unsure of a student's status should direct the student to the department chair.

DROPPING A COURSE
A student may drop a course via BannerWeb anytime between registration and the drop deadline, typically at the end of the first week of classes. A full tuition adjustment will be made to the student's financial account. Drop and add dates for each semester are available on BannerWeb at my.ltu.edu and at Academic Calendar.

If a hold limits the registration function on BannerWeb, a student may complete the Registration Form and obtain all required department and college signatures before submitting the form to Enrollment Services/Office of the Registrar. The form is available online at Enrollment Services forms.

A student who drops a course during the first two weeks of classes during the fall or spring semesters will have no grade or record of the course on his/her transcript.

Dropping below full-time status can negatively impact financial aid, scholarships, Housing, athletic eligibility, etc. Students with an F-1 or J-1 visa cannot drop below full-time status without prior approval from the Office of International Programs.

WAITLIST
Although the University makes every effort to project how many students will be eligible to take a specific course, sometimes more students wish to register for a course than class capacity can accommodate. In some instances, the department may institute a waitlist option for a course.

A student can access the waitlist (if enabled) through the standard process of adding a course on BannerWeb during open registration. All pre-requisite and hold requirements (if any) must be met.

A student is not guaranteed a seat in the course, regardless of position on the waitlist. The student will be notified by waitlist@ltu.edu to their LTU email if a seat becomes available. The student will then have 24 hours to finalize the course add in BannerWeb.

A student should avoid the waitlist whenever possible, especially if other sections of the same course have open seats. A student may not register for an open seat in the course and then try to get on the waitlist for another section.

Waitlisted courses do not count toward enrolled hours. In the event of a seat not becoming available, a student who does not otherwise have full-time status may experience a negative impact to financial aid, scholarships, ousing, athletic eligibility, etc. Students with an F-1 or J-1 visa cannot drop below full-time status without prior approval from the Office of International Programs.

For more details about the waitlist process, please refer to ltu.edu/registrars_office/waitlisting-faqs.asp.

WITHDRAWING FROM COURSES
A student who chooses to withdraw from a course or courses must do so via BannerWeb within the approved withdrawal period for the course. An official semester calendar is available on BannerWeb at my.ltu.edu and at ltu.edu/registrars_office/academic-calendar-final-exam.asp

All withdrawals must be initiated by the student to assure that a "W" will appear on the master grade roster and subsequent transcripts. The posted date of the withdrawal will be the date that the student completes the process on BannerWeb.

A student who withdraws from a course within the withdrawal period will receive a grade of "W." After the deadline, a student will not be permitted to withdraw from the course, and will receive a grade determined by the instructor (not a "W").

A student who does not attend courses or who misses a designated number of classes and who does not withdraw from the course will be issued the grade of "WF," or in the case of a developmental or ESL class, "WN." These grades indicate failure due to non-attendance and are further explained below this section.

When a W, WF, or WN are assigned, tuition and fees are not refunded. Exceptions to University policy are made only in rare circumstances, such as a debilitating illness. Requests made because of difficult work or class schedules are highly unlikely to be considered.

Withdrawing from a course can negatively impact financial aid, loans, scholarships, Housing, athletic eligibility, etc. 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.

WITHDRAWAL DATES FOR SUMMER AND SHORTER COURSES
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

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

ATTENDANCE

Attendance requirements are unique to each course section as per the instructor, department, and/or college. The attendance policy and how attendance impacts a student's grade will be posted in the course syllabus.

NON-ATTENDANCE PROCESS

A student with non-attendance or excessive absences, who has not withdrawn from the course, will be issued the failing grade of "WF" or "WN;" non-attendance is indicated by the last date of attendance as reported by the instructor.

For online courses, non-attendance is lack of participation in the online course (e.g., not submitting assignments, not contributing to the online discussions).

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).

- An "F" grade will be converted to a "WF" grade by the Office of the Registrar, if an instructor enters an "F" grade at the end of the term with a last date of attendance beyond the withdrawal deadline.

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 "WN" grade in a 3-credit course, the student's total enrolled credit hours becomes 9 credit hours).
- It does not count in the GPA.
- An "NC" grade will be converted to a "WN" grade by the Office of the Registrar, if an instructor enters an "NC" grade at the end of the term with a last date of attendance beyond the withdrawal deadline.

Non-attendance can be reported any time after the drop period. The non-attendance process is as follows:

- Instructor notifies Enrollment Services of non-attendance.
- Enrollment Services contacts the student by email informing him/her that the office has been notified of the student's 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.

A student will not be permitted to withdraw from a course after the deadline, and will receive a grade as determined by the instructor (not a "W" or "WN").

PREREQUISITES FOR COURSES
A student is responsible for satisfying the prerequisites listed in this *Catalog* for all courses in which he or she is registered. Only the department chair or dean of the college offering the course can approve a prerequisite waiver. If approved, the waiver is for one semester only and does not exempt the student from taking the prerequisite in the future.

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

DEVELOPMENTAL COURSES
A course is considered developmental if the corresponding LTU course number begins with a zero (0) or is prerequisite to the lowest-level course in the same subject area required within the student's

program of study. For example, if CHM1213 University Chemistry 1 is the lowest-level course in chemistry required within the student's program of study then CHM1154 Introduction to Chemical Principles is considered developmental for that student. Developmental courses may not be applied to satisfy degree requirements, including general elective credit.

PROGRESS IN A SUBJECT AREA

A student may not take a course for credit toward the degree if he or she has already earned credit for a higher-level course in the same subject area, either by transfer or by coursework completed at LTU, for which the lower-level class is understood to be prerequisite. For example, a student who has already earned credit for CHM1213 University Chemistry 1 may not subsequently take CHM1154 Introduction to Chemical Principles and expect that course to also be counted toward the degree. Questions about the prerequisite relationship between two courses will be resolved by the program or department offering the courses.

MIDTERM STATUS

The University pays close attention to a student's academic progress. Midway through the semester, a student who has been flagged at-risk in one or more courses will be contacted. All 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, the Academic Achievement Center, and the Horldt Writing Center.

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.

ACADEMIC PROBATION
Failure to Make Academic Progress

A student whose overall grade point average falls below 2.0 at the end of a semester will be placed on academic probation. A student on academic probation is required to have an advisor's approval to register or to add or drop any class. The dean or department chair may also place restrictions on a student's course schedule to ensure progress toward improved academic study.

A student may also be placed on academic probation for having a GPA lower than 2.0 in his or her major.

Excessive Repeating and Withdrawal

Any student is expected to successfully complete all the courses in which he or she is registered and are encouraged to carefully plan a schedule to avoid overloads and conflicts. A 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. Continuation of this behavior may result in suspension. Students may register for the same course up to three times. After that point, the signature of the dean of the student's college is required to register. Circumstances demonstrably beyond the student's control may excuse him or her from this requirement, but poor scholarship will not.

Failure to Complete Lower Division LTU Core Curriculum Requirements

Lower division (freshman and sophomore) Core Curriculum requirements are expected to be completed before entering the junior year (60 or more semester credits). A junior who has not completed lower division Core Curriculum requirements should register for these courses each semester, concurrently with upper-division (junior/senior) courses, until the requirements are met.

A student who earns 90 semester credits without completion of lower division Core Curriculum requirements will be placed on academic probation regardless of GPA until these requirements are met.

ACADEMIC SUSPENSION AND DISMISSAL

Any student who remains on probation at the end of four consecutive semesters (enrolled or not enrolled) will be suspended from the University for a minimum of one calendar year. A student may appeal the suspension by a written request to the department chair of his or her major.

Additionally, 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.

ACADEMIC STANDING COMMITTEE/READMISSION

A student who has 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.

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 awarded 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 who has been readmitted after suspension who then fails to meet the conditions of readmission will be dismissed from the University. Students dismissed from the University under these circumstances may not be readmitted.

DOUBLE-DIPPING UG/GR CREDIT

Students are allowed to share up to 9 credits with both the undergraduate and graduate levels. The course number must be at the 5000 level or above. The course will appear as transfer credit on the transcript level of the second degree it is also being applied to. Transfer credit does not impact the grade point average.

ENROLLMENT AT OTHER INSTITUTIONS (GUEST CREDIT)

Lawrence Technological University

A Lawrence Tech student may not take courses at other institutions 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 credit.

To be considered for guest credit, a student 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 ltu.edu/registrars_office/forms_to_print.index.asp).

Additional considerations include, but are not limited to, the following:
1. Guest credit will not be approved for any course offered at a local community college if the equivalent class is offered in the same semester at Lawrence Tech
2. No more than one course in a single subject area may be satisfied via guest credit. For example, you may not request guest credit approval for both LLT1213 and LLT1223
3. Guest credit will not be approved if it would result in the completion of all degree requirements in a single subject area to the exclusion of any LTU coursework in that subject area. For example, guest credit for LLT1223 will be denied if LLT1213 has been satisfied by transfer credit and no other LLT coursework is required within the student's major
4. An online class is rightfully deemed unacceptable for guest credit approval if the corresponding LTU class is never offered online

A student must submit the Guest Credit Request 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 GPA in the approved course to have the credit awarded. The student is responsible for having the official transcript from the guest institution sent to Enrollment Services/Office of the Registrar at Lawrence Tech. Until the official transcript arrives, the credit will not be posted on the student's LTU transcript. Credits earned through this process will be awarded and prerequisites may be satisfied; however, grades from other institutions are never included on a student's LTU transcript or in his or her LTU GPA. Approved guest credit courses may not be used in GPA recomputation.

DEAN'S LIST
In recognition of superior scholastic achievement, a Dean's List is published at the close of each semester, and an appropriate notation is made on a student's academic record. This includes any undergraduate with a minimum of 6 credit hours and a GPA of 3.5 or higher for that semester. If a student has selected confidentiality status, his or her name 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. A graduate is mailed an unofficial copy of his or her academic transcript 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.

CREATIVE WORK

All creative work produced in order to satisfy course requirements, including, but not limited to, drawings, models, digital files and other documents, become the property of the University and may be kept or returned at the sole discretion of the college offering the course. When such work is kept, arrangements will be made for the students to receive suitable photographic copies as a record of their 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 (ltu.edu/registrars_office/forms_to_print.index.asp).

Lawrence Technological University

Policies, Procedures, and Regulations

ACADEMIC HONOR CODE
Downloadable copy available at 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 Tech, like all universities, depends on the honesty and integrity of its faculty, staff, and students, and for this reason every member of the 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, at 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 Tech 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, the 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 Tech 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 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 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 Office 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.
2. "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.)
3. Inappropriate and offensive sexual advances (e.g., requests for social or sexual encounters, often accompanied by touching).
4. 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.
5. Solicitation of sexual activity or other sex-related behavior by promise of rewards (e.g., grades, promotions, promises of greater opportunities, etc.).
6. "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.)

7. 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).
8. "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.)
9. 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.
10. "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.

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.

Lawrence Technological University provides Clinical Counseling to parties involved if they so choose. Counseling services can be reached at clinicalcounseling@ltu.edu or 248-240-4100.

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 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.

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.

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 Office 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 University's Office 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 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
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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 Tech 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* (ltu.edu/academicsandmajors/grad_cat.asp):

Associate of Arts
Media Arts and Production

Associate of Science
General Studies

Bachelor of Arts
Media Communication

Bachelor of Fine Arts
Game Design
Graphic Design

Bachelor of Science
Architecture
Audio Engineering Technology
Biology
Biomedical Engineering*
Business Data Analytics
Chemistry
Civil Engineering*
Computer Engineering*
Computer Science
Construction Engineering Technology and Management
Data Science
Electrical Engineering*
Embedded Software Engineering
Industrial Design
Industrial Engineering
Interior Design
Information Technology
Mathematical Sciences
Mechanical and Manufacturing Engineering Technology**
Mechanical Engineering*
Nursing
Physics
Physics and Computer Science
Psychology
Robotics Engineering*
Technological Humanities

Transportation Design

Bachelor of Science in Business Administration
Accounting
Finance
General Business
Information Technology
Marketing

Master of Science
Architectural Engineering (integrated baccalaureate-master's level program)*
Computer Science

Master
Architecture
MBA – Accounting
MBA – Finance
MBA – General Business
MBA – Information Technology
MBA – Marketing

Above programs are integrated baccalaureate-master's level programs.

Minors
Aeronautical Engineering
Biology
Business Administration
Computer Science
Economics
Energy Engineering
English
General Sciences
History
Game Design
Graphic Design
Nanotechnology
Philosophy
Psychology
Technical and Professional Communication

Pre-Professional Programs (non-degree)
Pre-Dental
Pre-Law
Pre-Medical
Post-Baccalaureate Certificate in Premedical Studies

Certificates
Building Information Model and Computer Visualization (online only)
Computer Science
Design Thinking
Electrical Power Systems
Embedded Systems
Entrepreneurial Skills
Game Software Development
Industrial/Organizational Psychology
Technical and Professional Communication
Television and Video Production

* Accredited by the Engineering Accreditation Commission (EAC) of ABET, https://www.abet.org.
** Accredited by the Engineering Technology Accreditation Commission (ETAC) of
ABET, https://www.abet.org.

DUAL 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 dual major, students simply complete all of the course requirements for both majors. Because of overlapping course requirements and general electives in both majors, a dual major can be earned more efficiently than the degrees earned separately. 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.

LTU HONORS PROGRAM
Qualified incoming freshmen in all majors are invited to apply to join the University Honors Program and take part in a structured curriculum of challenging courses designed for honors credit. Honors students are also afforded the opportunity to participate in exclusive extra-curricular activities including social events, community service projects, and professional development activities. Students are invited to join the Honors Program if they have a minimum 3.50 GPA or higher in high school A second College Honors Program curricular option is also available for qualified transfer students and non-freshmen.

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;
- Provide one-on-one Honors Program advising and priority registration to ensure that students can complete all curricular requirements.

For more information on the Honors Program and to apply, please visit
ltu.edu/arts_sciences/honors_program/.

UNDECLARED MAJORS

The University welcomes students interested in exploring their educational options prior to declaring a major. While completing the Core Curriculum 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.

ARTS AND SCIENCES UNDECLARED PROGRAM

In specific circumstances, a student whose high school GPA is below the point of entry for admission into his or her program of interest might be admitted into the Arts and Sciences Undeclared (ASUD) program. That student will then take courses necessary to prepare him or her for the intended program of study. These courses are based on a student's placement scores.

Academic advisors work closely with ASUD students to select courses which will count toward the student's intended degree, provided that all prerequisites have been satisfied.

A student who has been admitted into the ASUD program based on high school GPA will be eligible to declare a major following the successful completion of twenty-four credits and an LTU GPA eligible for the intended program, or the discretion of the ASUD program director.

SIMULTANEOUS ENROLLMENT

Students may be simultaneously enrolled in appropriate associate and bachelor's degree programs. A typical combination is 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. 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, Business and Information Technology, 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 Architecture and Design (CoAD)
Introduction to Design (DES1022)
Design Leadership (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 1022. 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 Arts and Sciences (CoAS)
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)

Students who have not completed the pre-2017 Leadership Program are required to complete their college specific requirements in their entirety. Questions regarding Leadership requirements can be directed to their academic advisor.

College of Business and Information Technology (CoBIT)
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 concepts and styles, ethics, teamwork, and management development. This course also covers essential capabilities required of effective leaders: planning, communications, dealing with change, decision-making, conflict resolution, managing diversity, motivation, engagement, 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 to understand how to best lead self and others. 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 Engineering (CoE)
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.

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 Curriculum 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 Curriculum 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:
  - SSC 2413 Foundations of the American Experience
  - SSC 2423 Development of the American Experience
  - LLT 1213 World Masterpieces 1
  - LLT 1223 World Masterpieces 2
- Two courses in communication, written, oral, and visual:
  - COM 1103 College Composition
  - COM 2103 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 mathematical techniques that can be applied to countless areas in science, business, engineering, and art. Beyond being able to perform standard operations, students will be expected to understand the basic functions of mathematics and how they apply to everyday life. The goal is to understand relationships within data through equations, models, 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.

Core Curriculum 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, business, 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 Curriculum 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.

Lawrence Technological 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.

All undergraduates must satisfy the Core Curriculum requirements through completion of the following course sequences:

Communication

COM 1103 College Composition	3 credits
COM 2103 Technical and Professional Communication	3 credits

Humanities and Social Sciences

SSC 2413 Foundations of the American Experience	3 credits
SSC 2423 Development of the American Experience	3 credits
LLT 1213 World Masterpieces 1	3 credits
LLT 1223 World Masterpieces 2	3 credits
Junior- or senior-level elective	3 credits
Minimum Communication, Humanities, and Social Sciences TOTAL	21 credits

Mathematics and Analysis

BS majors: Mathematics through concepts of 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 Curriculum Requirements TOTAL	32-35 credits

Lawrence Technological University

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.

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 Developmental Studies courses (course level zero) will receive credit hours and grade points for such courses, but the credit hours earned for these Developmental 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 a minimum number of credits overall:
    - For a certificate or minor, 50% of the stated requirement;
    - For an associate's degree, a minimum of 15 credit hours;
    - For a bachelor's degree, a minimum of 30 credit hours, including 24 credits in the student's major and 24 credits of coursework at the 3000-level or above;
    - For a master's degree, a minimum of 21 credit hours.
- In addition, completion at Lawrence Tech of the **last** 15 credit hours of coursework for any degree;
- 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

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.

Petition to Graduate/Graduation Deadlines
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

The student is responsible to be aware of these dates and adhere to them. Petition to Graduate forms can be downloaded at 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.

Certificates in English proficiency are issued by LTU's ESL Institute, an accredited language-instruction program. After the add/drop period of the ESL student's first semester, a petition to graduate for the certificate will be entered on behalf of the student, and a fee assessed to the student's account.

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.

Graduate Coursework Taken While an Undergraduate Student
Undergraduate students with 90 or more undergraduate credit hours who have a cumulative (overall and in-major) GPA of 3.0 or higher may be permitted to take a graduate level (5000 level or higher) course. This permission is at the discretion of the student's college.

Undergraduate students meeting the requirements within their college to take graduate level coursework (5000 level or higher), upon the discretion of the student's college, may transfer no more than six graduate level credits to their undergraduate level program.

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

Architecture	ARC
Design	DES
Fine Arts	ART
Game Art	GAM
Graphic Design	GRA
Industrial Design	IDD
Interior Architecture/Design	ARI
Interior Design	INX
Transportation Design	ATD
Urban Design	URB

College of Arts and Sciences

Biology	BIO
Chemistry	CHM
Communication	COM
Creative Writing	CRW
Geology	GLG
Humanities	HUM
Language and Literature	LLT
Mathematics and Computer Science/Math Co-op	MCS
Media Communication	MCO
Nursing	NUR
Physician Assistant Studies	PAS
Physical Science	PSC
Physics	PHY
Psychology	PSY
Social Science	SSC
Study Abroad	SAP

College of Business and Information Technology

Accounting	ACC
Dissertation	DIS
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

College of Engineering

Architectural Engineering	EAE
Biomedical Engineering	BME
Cardiovascular Perfusion	CVP
Civil Engineering	ECE
Construction Engineering Technology	TCE
Doctoral	DIS
Electrical and Computer Engineering	EEE
Electrical Engineering Technology	TEE
Embedded Software Engineering	ESE
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 and Robotics Engineering	MRE
Tech Alternative Energy	TAE
Technology Audio Systems	TAS

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

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

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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Ahu Yolaç

Associate Professors of Practice
Peter Davis
Len DiLaura
Jenna Reed Walker
Eric Ward

Professors Emeriti
James Abernethy
William Allen
Janice Means
Tom Nashlen

UNDERGRADUATE DEGREE PROGRAMS IN ARCHITECTURE AND DESIGN
The College of Architecture and Design (CoAD) 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 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 were 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 ltu.edu/architecture_and_design/student_resources.asp along with additional information about the college, its faculty, students, and staff.

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 Science in Interior Design program is accredited by CIDA and NASAD. The Bachelor of Fine Arts in Graphic Design, Bachelor of Fine Arts in Game Design, Bachelor of Science in Industrial Design and Bachelor of Science in Transportation Design are 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 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 professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of*

accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a preprofessional undergraduate degree in architecture for admission. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

Lawrence Technological University, College of Architecture and Design offers the following NAAB-accredited degree programs:

MArchDE (133 undergraduate credits + 36 graduate credits)
MArch (preprofessional degree + 36 graduate credits)
MArch (non-preprofessional degree + 89 graduate credits)
MArch (non-preprofessional degree + 60/79 graduate credits)

Next accreditation visit for the architecture program: 2023

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 Fine Arts in Game Design
The Bachelor of Fine Arts in Game Design program at LTU is an accredited, professional baccalaureate degree program that focuses on game system and level design. Level designers are responsible for designing and arranging the immediate, interactive play spaces. This focus provides students with skills and knowledge that are essential to game development and understanding the integration of game assets into comprehensive systems.

As level designers, students learn practical skills such as scripting and modeling alongside a deeper understanding of spatial design, environmental psychology and spatial flow. The program balances a focus on points of interaction, balancing, and pacing within game design systems with a broad knowledge of development. Students within the game design program develop game systems through research, analysis, and the synthesis of data as guided by design framing and intentions.

Bachelor of Fine Arts in Graphic Design
The Bachelor of Fine Arts in Graphic Design program at LTU is an accredited, professional baccalaureate degree program that provides students with a comprehensive experience in the dynamic field of graphic design, ranging from print media to the latest innovations in interactive and time-based projects.

The curriculum encourages students to explore the connection between intellectual inquiry, creativity and hands-on making. Studies in literature, the sciences, philosophy, history, and math build a cultural awareness that informs design decisions and artistic expression.

Emphasis is placed on helping our students develop a distinctive point of view for their creative activities. The program culminates with a thesis project and public exhibition, where students develop an investigative body of work that focuses on their individual interests within the field. Internship opportunities further prepare students with the knowledge, skillset, and experiences for professional practice.

Bachelor of Science in Architecture
Master of Architecture Direct-Entry
The Bachelor of Science in Architecture (BSArch) 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 BSArch program may advance into LTU's graduate programs.

The BSArch 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 BSArch 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 BSArch program.

Bachelor of Science in Industrial Design
The Bachelor of Science in Industrial Design program at Lawrence Technological University is an accredited, professional baccalaureate degree program that focuses on the innovative integration of professional practice to include business case assessment, entrepreneurship, leadership, product

Lawrence Technological University

psychology, customer journey experience, marketing, sustainability, packaging, and cultural geography.

Students within the industrial design program 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.

Bachelor of Science in Interior Design
The Bachelor of Science in Interior Design at Lawrence Technological University is an accredited, professional studio-based baccalaureate degree program. It offers a curriculum that encourages students to create intentional interiors in a manner that is practically grounded, critically framed, and invested in cultural relevancy and technical advancement. The program is accredited by the Council for Interior Design Accreditation (CIDA), National Association of Schools of Art and Design (NASAD) and is a registered campus center of the International Interior Design Association (IIDA).

The Interior Design curriculum reinforces the multidisciplinary nature of design by placing value on environmental, psychological, cultural, social, economic, spiritual, sensory, technical, and physical factors to comprehensively respond to human needs. Our approach centers on empathetic and human-centered design responses through collaboration with our clients and partners in allied design disciplines. Interior Design embraces continual societal change. We explore the temporalities of interior space as a time-specific practice influenced by social, cultural, and technological pressures in human environments. Critical thinking and creativity are emphasized throughout the curriculum, stressing their role in professional applications.

Bachelor of Science in Transportation Design
The Bachelor of Science in Transportation Design program at Lawrence Technological University is an accredited, professional baccalaureate degree program that prepares students for careers in the fields of transportation 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 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 Design
The Minor in Game Design provides a technical and creative skillset to students who wish to

incorporate game design into their major coursework or to pursue further study in design-related fields. Lecture and studio courses introduce students to design foundations, visual communication, game history, and game systems. Coursework includes design thinking, level design, scripting and an introduction to game systems design.

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.

GRADUATE COURSEWORK TAKEN WHILE AN UNDERGRADUATE STUDENT
Undergraduate students in the College of Architecture and Design with 90 or more undergraduate credit hours who have a cumulative (overall and in-major) GPA of 3.0 or higher may be permitted to take a graduate level (5000 level or higher) course. This permission is at the discretion of the student's college.

PROGRAM COURSEWORK
The required courses and credit hours for each degree program are shown below.

BACHELOR OF FINE ARTS IN GAME DESIGN
TOTAL CREDIT HOURS: 120
Game Design Advisors:

Stephen Mallory	248.204.2864	smallory@ltu.edu	office A117
Philip Plowright	248.204.2870	pplowrigh@ltu.edu	office T215
Ahu Yolac	248.204.2861	ayolac@ltu.edu	office A118

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3
DES 1213	Design Principles	3
DES 1022	Introduction to Design	2
IDD 1813	Drawing and Design Geometry 1	3
MCS 1254	Geometry in Art	4
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of the American Experience	3
IDD 1823	Drawing and Design Geometry 2	3
DES 1223	Design Methodologies	3
GAM 1513	Introduction to Game Systems	3
	TOTAL	15

Sophomore Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
GAM2253	Level Design	3
MCS 2193	Scripting for Game Design	3
GAM 2123	Digital Drawing and Painting	3
Conc. Elective	Digital Environments, Objects, or Interfaces	3
Conc. Elective	Digital Environments, Objects, or Interfaces	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3
GAM 2213	History of Game Design	3
TIE 4923	Game Audio & Sound Design 1	3
Conc. Elective	Digital Environments, Objects, or Interfaces	3
Conc. Elective	Digital Environments, Objects, or Interfaces	3
DES 2020	Sophomore Portfolio Review	0
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Professional Communication	3
CRW 2513	Creative Writing	3
GRA 2223	Visual Culture	3
GAM 2513	Game Systems	3
Nat. Sci. Elective	BIO/PHY/CHM/GLG/PSC	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2423	Development of the American Experience	3
DES 3623	Multi-disciplinary Design	3
GAM 2523	Integrated Game Studio	3
IDD 3823	User Experience and User Interface Design	3
Conc. Elective	Digital Environments, Objects, or Interfaces	3
	TOTAL	15

SUMMER

Course Number	Subject	Cr. Hrs.
DES 4530	Internship	0

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
DES 4112	Design Leadership	2
Nat. Sci. Elective w/ Lab	BIO/PHY/CHM/GLG/PSC	4
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
GAM 4513	Game Systems Senior Project 1	3

		TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY 3/4XX3	Junior/Senior Elective	3
Conc. Elective	Digital Environments, Objects, or Interfaces	3
GRA 3323	Professional Practice	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX/URB3	3
GAM 4523	Game Systems Senior Project 2	3
	TOTAL	15

Digital Objects Concentration Courses

Course Number	Subject	Cr. Hrs.
IDD 1523	Basic Prototyping	3
IDD 2813	3D Visualization 1	3
IDD 2823	3D Visualization 2	3
GAM 3143	3D Animation Lab	3
IDD 3713	Human Factors and Ergonomics	3
GAM 4113	Advanced Digital Objects	3

Digital Environments Concentration Courses

Course Number	Subject	Cr. Hrs.
ARC 1213	Intro to Visual Communication	3
GAM 2133	3D Environment Modeling	3
GAM 2233	Digital Spaces Lab	3
GAM 3143	3D Animation Lab	3
INX 2413	Human Behavior in the Built Environment	3
GAM 4123	Advanced Digital Environments	3

Digital Interface Concentration Courses

Course Number	Subject	Cr. Hrs.
GRA 2813	Digital Foundations	3
GRA 3043	Video Design	3
GRA 2623	Motion Graphics	3
GRA 3343	Digital Product Design	3
GRA 3383	Web Design	3
GAM 4133	Advanced Digital Interface	3

BACHELOR OF FINE ARTS IN GRAPHIC DESIGN
TOTAL CREDIT HOURS: 120
Graphic Design Advisors:

Steve Coy	248.204.2835	scoy@ltu.edu	office A215
Lilian Crum	248-204.2869	lcrum@ltu.edu	office T430

Lawrence Technological University

Steve Rost	248.204.2862	srost@ltu.edu	office T432
Philip Plowright	248.204.2870	pplowrigh@ltu.edu	office T215

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1103	College Composition		3
DES1213	Design Principles		3
DES 1022	Introduction to Design		2
GRA 2113	Thinking by Drawing		3
GRA 2813	Digital Foundations		3
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 1213	World Masterpieces 1		3
SSC 2413	Foundations of the American Experience		3
MCS 1254	Geometry in Art		4
GRA 2413	Typography 1		3
DES 1223	Design Methodologies		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 1223	World Masterpieces 2		3
GRA 3413	Typography 2		3
GRA 2223	Visual Culture		3
GRA 2523	Foundations of Graphic Design		3
ART 3023	Photography: Darkroom to Digital		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of the American Experience		3
IDD 3823	User Experience and User Interface Design		3
GRA 3513	Investigative Graphic Design		3
GRA 2623	Motion Graphics		3
DES 2020	Sophomore Portfolio Review		0
PSY 1213	Introduction to Psychology		3
		TOTAL	15

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Professional Communication	3
GRA 3523	Graphic Design for Social Innovation	3
GRA 3563	History of Graphic Design	3
GRA 3343	Digital Product Design	3
GRA 3043	Video Design	3

		TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
Nat. Sci. Elective w/ Lab	BIO/PHY/CHM/GLG/PSC	4
GRA 3383	Web Design	3
GRA 3323	Professional Practice	3
DES 3623	Multi-disciplinary Design	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
	TOTAL	16

SUMMER

Course Number	Subject	Cr. Hrs.
DES 4530	Internship	0

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
DES 4112	Design Leadership	2
GRA 3533	Graphic Design for the Field	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
LLT/SSC/PSY 3/4XX3	Junior/Senior Elective	3
2/3XX3 elective	MGT/MKT/INT/ACC/HRM	3
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs
Nat. Sci. Elective	BIO/PHY/CHM/GLG/PSC	3
GRA 4513	Graphic Design Thesis	3
½/3/4XX3	General Elective	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
	TOTAL	15

BACHELOR OF SCIENCE IN INTERIOR DESIGN
TOTAL CREDIT HOURS: 121
Interior Design Advisors:

Len DiLaura	248.204.2823	ldilaura@ltu.edu	office A116
Philip Plowright	248.204.2870	pplowrigh@ltu.edu	office T215
Jenna Walker	248.204.2853	jwalker1@ltu.edu	office A112

Freshman Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
DES1022	Introduction to Design	2
DES 1213	Design Principles	3
ARC1213	Introduction to Visual Communication	3
MCS 1074	Precalculus	4
COM 1103	College Composition	3

		TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1213	World Masterpieces 1	3
INX 2323	Interior Materials and Systems	3
ARC 1223	Visual Communication	3
DES 1223	Design Methodologies	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.
INX 2313	History of Interiors	3
IDD 3713	Human Factors + Ergonomics	3
INX 2513	Bodies in Space	3
GRA 2523	Foundation of Graphic Design	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3
INX 2413	Humans Behavior in the Built Environment	3
ARC 3823	Prototyping + Fabrication	3
INX 2523	Spatial Perception	3
MCS 2124	Statistics	4
DES 2020	Sophomore Portfolio Review	0
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2413	Foundations of the American Experience	3
COM 2103	Technical and Professional Communication	3
ARC 3613	History of the Designed Environment 1	3
INX 3313	Furniture and Millwork	3
INX 3513	Situated Interior Response	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ARC 3623	History of the Designed Environment 2	3
INX 3213	Human Comfort	3
DES 3623	Multi-disciplinary Studio	3
INX 3223	Documentation, Detailing + Specifications	3
PSC 1143	Environmental Science & Sustainability	3
	TOTAL	15

SUMMER

Lawrence Technological University

Course Number	Subject	Cr. Hrs.
DES 4530	Internship	0

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
INX 4313	Interior Design Practice	3
DES 4112	Design Leadership	2
DES 4643	Design Theory	3
INX 4513	Space and Empathy	3
INX 4213	Interiors Capstone Research Seminar	3
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2423	Development of the American Experience	3
LLT/SSC/PSY 3/4XX3	Junior/Senior Elective	3
INX 4523	Interiors Capstone	3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD	3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD	3
	TOTAL	15

BACHELOR OF SCIENCE IN ARCHITECTURE
TOTAL CREDIT HOURS: 133
Architecture Advisor:
Dale Allen Gyure   248.204.2925   dgyure@ltu.edu   office T215

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
DES 1022	Introduction to Design	2
DES 1213	Design Principles	3
ARC 1213	Introduction to Visual Communication	3
MCS 1/2XX4*	Mathematics Elective 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.
SSC 2413	Foundations of the American Experience	3
LLT 1213	World Masterpieces 1	3
DES 1223	Design Methodologies	3
ARC 1223	Visual Communication	3
MCS 1/2XX4*	Mathematics Elective 2	4
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
ARC 3613	History of the Designed Environment 1	3
ARC 2116	Integrated Design 1	6
ARC 2813	Information Modeling & Simulation	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3
ARC 3623	History of the Designed Environment 2	3
ARC 2126	Integrated Design 2	6
ARC 3823	Prototyping and Fabrication	3
PSC 1143	Environmental Science	3
	TOTAL	18

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2423	Development of the American Experience	3
ARC 3116	Integrated Design 3	6
ARC 2313	Construction Systems 1	3
ARC 2513	Basic Structures	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Professional Communication	3
ARC 4183	20th Century Architecture	3
ARC 3126	Integrated Design 4	6
ARC 2323	Construction Systems 2	3
ARC 3513	Intermediate Structures	3
	TOTAL	18

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT/SSC/PSY3/4XX3	Junior/Senior Elective		3
DES 4112	Design Leadership		2
ARC 4116	Integrated Design 5		6
ARC 4543	Advanced Structures		3
ARC 3423	HVAC and Water Systems		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ARC 4126	Comprehensive Design		6
ARC 4443	Acoustics, Electrical, and Illumination		3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD		3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD		3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD		3
		TOTAL	18

BACHELOR OF SCIENCE IN INDUSTRIAL DESIGN
TOTAL CREDIT HOURS: 121
Industrial Design Advisors:

Nur Saltik	248.204.2871	bsaltik@ltu.edu	office A156
Phillip Plowright	248.204.2862	pplowrigh@ltu.edu	office T215

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1103	College Composition		3
DES 1022	Introduction to Design		2
DES 1213	Design Principles		3
IDD 2813	3D Visualization 1		3
IDD 1813	Drawing and Design Geometry 1		3
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
IDD 3723	Industrial Design History		3
DES 1223	Design Methodologies		3
IDD 1823	Drawing and Design Geometry 2		3
IDD 2823	3D Visualization 2		3
IDD 1523	Basic Prototyping		3
		TOTAL	15

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 1213	World Masterpieces 1		3
IDD 3713	Human Factors and Ergonomics		3
IDD 2613	Foundations of Product Design		3

IDD 2513	Casting and Construction	3
MCS 1074	Precalculus	4
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of the American Experience	3
MCS 1254	Geometry in Art	4
IDD 2623	Human Centered Design	3
ARC 3823	Prototyping and Fabrication	3
DES 2020	Sophomore Portfolio Review	0
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of the American Experience	3
Nat. Sci. Elective w/ Lab	BIO/PHY/CHM/GLG/PSC	4
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD	3
IDD 3613	Sustainable Systems	3
IDD 3113	Wearable Technology Design	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Professional Communication	3
Nat. Sci. Elective	BIO/PHY/CHM/GLG/PSC	3
IDD 3523	Professional Practice	3
IDD 3823	User Experience and User Interface Design	3
DES 3623	Multi-disciplinary Design	3
	TOTAL	15

SUMMER

Course Number	*Subject*	*Cr. Hrs.*
DES 4530	Internship	0

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
DES 4112	Design Leadership	2
GRA 3343	Digital Product Design	3
IDD 4613	Design for Impact	3
INX 3313	Furniture and Millwork Design	3
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3/4XX3	Junior/Senior Elective	3
IDD 4523	Materials and Manufacturing Process	3

IDD 4823	Rapid Technology	3
IDD 4623	Senior Thesis	4
CoAD Elective	ARC/ART/ATD/GAM/GRA/IDD/INX	3
	TOTAL	15

BACHELOR OF SCIENCE IN TRANSPORTATION DESIGN

TOTAL CREDIT HOURS: 124

Transportation Design Advisors:

Peter Davis	248.204.2886	pdavis@ltu.edu	office A153
Phillip Plowright	248.204.2870	pplowrigh@ltu.edu	office T215

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3
DES 1022	Introduction to Design	2
DES 1213	Design Principles	3
IDD 1813	Drawing and Design Geometry 1	3
MCS 1074	Precalculus	4
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 1254	Geometry in Art	4
IDD 3723	Industrial Design History	3
DES 1223	Design Methodologies	3
IDD 1823	Drawing and Design Geometry 2	3
ATD 1223	Clay Surface Development	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1213	World Masterpieces 1	3
ATD 2513	Human Factors and Vehicle Packaging	3
ATD 2613	Transportation Design Foundations	3
ATD 2713	TD VisCom 1	3
ATD 2213	TD 3D Modeling 1	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3
ATD 2623	Performance Design: Exteriors	3
ATD 2633	Performance Design: Interiors & UI	3
ATD 2723	TD VisCom 2	3
ATD 2223	TD 3D Modeling 2	3
DES 2020	Sophomore Portfolio Review	0

		TOTAL	15

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2413	Foundations of the American Experience		3
ATD 3603	Sustainable Design: Exterior		3
ATD 3613	Sustainable Design: Interiors & UI		3
ATD 3713	TD VisCom 3		3
ATD 3213	TD 3D Modeling 3		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of the American Experience		3
IDD 3523	Professional Practice		3
DES 3623	Multi-disciplinary Design		3
ATD 3723	TD VisCom: Style		3
ATD 3223	TD 3D Modeling: AR-VR		3
		TOTAL	15

SUMMER

Course Number	Subject	Cr. Hrs.
DES 4530	Internship	0

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
Nat. Sci. Elective	BIO/PHY/CHM/GLG/PSC		3
COM 2103	Technical and Professional Communication		3
DES 4112	Design Leadership		2
ATD 4613	Professional Design Challenge		3
ATD 4713	TD VisCom: Punch List		3
ATD 4213	TD 3D Modeling: Animation		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
Nat. Sci. Elective w/ lab	BIO/PHY/CHM/GLG/PSC		4
LLT/SSC/PSY 3/4XX3	Junior/Senior Elective		3
IDD 4523	Materials and Manufacturing Process		3
ATD 4623	Capstone Design		3
ATD 4223	TD 3D Modeling Capstone		3
		TOTAL	16

Certificate in Building Information Modeling and Computer Visualization (BIM)
TOTAL CREDIT HOURS: 12

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 Design

TOTAL CREDIT HOURS: 24

Game Design Advisors:

Stephen Mallory	248.204.2864	smallory@ltu.edu	office A117
Phillip Plowright	248.204.2870	pplowrigh@ltu.edu	office T215
Abu Yolac	248.204.2861	ayolac@ltu.edu	office A118

Course Number	*Subject*	*Cr. Hrs.*
DES1213	Design Principles	3
DES1223	Design Methodologies	3
GRA2813	Digital Foundations	3
-or-		
ARC 1223	Visual Communication	3
-or-		
IDD 1823	Drawing & Design Geometry 1	3
GAM 2213	History of Game Design	3
GAM 1513	Introduction to Game Systems	3
GAM 2253	Level Design	3
MCS 2193	Scripting for Game Design	3
GAM 2513	Game Systems	3
	TOTAL	24

Minor in Graphic Design

TOTAL CREDIT HOURS: 24

Graphic Design Advisors:

Lillian Crum	248.204.2869	lcrum@ltu.edu	office A218
Phillip Plowright	248.204.2870	pplowrigh@ltu.edu	office T215

Course Number	*Subject*	*Cr. Hrs.*
DES 1213	Design Principles	3
DES 1223	Design Methodologies	3
GRA 2813	Digital Foundations	3
-or-		
ARC 1223	Visual Communication	3
-or-		
IDD 1813	Drawing & Design Geometry 1	3

GRA 3563	History of Graphic Design	3
GRA 2413	Typography 1	3
GRA 2523	Foundations of Graphic Design	3

Choose two:

GRA 3523	Investigative Graphic Design	3
-or-		
GRA 2623	Motion Graphics	3
-or-		
GRA 3523	Graphic Design for Social Innovation	3
-or-		
GRA 4513	Graphic Design for the Field	3
-or-		
GRA 3413	Typography 2	3
	TOTAL	24

MASTER OF ARCHITECTURE DIRECT-ENTRY
TOTAL CREDIT HOURS: 169
Architecture Advisors:
Dale Allen Gyure   248.204.2925   dgyure@ltu.edu   office T215

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
DES 1022	Introduction to Design	2
DES 1213	Design Principles	3
ARC1213	Introduction to Visual Communication	3
MCS 1/2XX4*	Mathematics Elective 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.
SSC 2413	Foundations of the American Experience		3
LLT 1213	World Masterpieces 1		3
DES 1223	Design Methodologies		3
ARC 1223	Visual Communications		3
MCS 1/2XX4*	Mathematics Elective 2		4
		TOTAL	16

Second Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ARC 3613	History of the Designed Environment 1		3
ARC 2813	Information Modeling and Simulation		3
ARC 2116	Integrated Design 1		6
PHY 2213	College Physics 1		3
PHY 2221	College Physics 1 Lab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 1223	World Masterpieces 2		3
ARC 3623	History of the Designed Environment 2		3
ARC 3823	Prototyping and Fabrication		3
ARC 2126	Integrated Design 2		6
PSC 1143	Environmental Science and Sustainability		3
		TOTAL	18

Third Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of the American Experience		3
ARC 3116	Integrated Design 3		6
ARC 2313	Construction Systems 1		3
ARC 2513	Basic Structures		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Professional Communication		3
ARC 4183	20th Century Architecture		3
ARC 3126	Integrated Design 4		6
ARC 2323	Construction Systems 2		3
ARC 3513	Intermediate Structures		3
		TOTAL	18

Fourth Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY 3/4XX3	Junior/Senior Elective	3
DES 4112	Design Leadership	2
ARC 4116	Integrated Design 5	6

ARC 4543	Advanced Structures	3
ARC 3423	HVAC and Water Systems	3
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD	3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD	3
CoAD Elective	ARC/ARI/ART/ATD/GAM/IDD	3
ARC 4126	Comprehensive Design	6
ARC 4443	Acoustics, Electrical, and Illumination	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
CoAD 5/6xx3Elective (ARC/ART/ARI/URB)	CoAD 5000 or 6000 level electives	9
Non-CoAD 5/6xx3	Non-CoAD Electives	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 media communication, or architecture and construction engineering technology and management must consult with an advisor in the freshman or sophomore 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 (ltu.edu/registrars_office/forms-to-print.asp).

CERTIFICATE PROGRAMS
The college offers a professional certificate program that may be of interest to practicing professionals and to students currently enrolled in undergraduate degree programs.

Building Information Modeling (BIM) Certificate –Undergraduate
The Building Information Modeling (BIM) at LTU is available online, as both an undergraduate and graduate certificate. It covers building information modeling and computer visualization, both of which play an increasingly important role in architecture, specifically building design, construction, and operation with the help of cutting-edge computer software, building information modeling and computer visualization use 3D modeling techniques that integrate a building's components – properties, location, geometry, spatial relationships, etc. The ability to visualize the project with BIM software increases productivity in the overall building process and improves communication between architects, engineers, contractors, and other key team members, making the project more efficient and economical.

Undergraduate Certificate Required Courses (12 credits total)
ARC 2843 BIM Fundamentals
ARC 3843 BIM for Building Systems
ARC 4813 BIM for Energy and Ecology
ARC 4843 BIM Programming and Prototyping

College of Arts and Sciences
Dean
Srini Kambhampati
S101, 248.204.3500

Associate Dean
Glen Bauer
S101, 248.204.3500

ABOUT THE COLLEGE OF ARTS AND SCIENCES
The goal of Lawrence Technological University'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 the 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 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 available to College of Arts and Sciences majors that allows students to investigate a subject over and above the requirements of a course with mentoring from a faculty, staff, community, or industry guide. Students can also choose to explore areas of interest beyond their majors that may lead to the consideration of alternate career paths. Students can complete one Quest project per year and are able to begin a project as early as their freshman year.

Eligible Projects

Quest projects must meet the following three criteria:
1. They enhance the learning experience at Lawrence Tech through performance, presentation, display, publication, demonstration, or instruction.
2. They have both theoretical and practical components and require critical thinking and 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 encourage students to reach 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* (LTU's creative art and writing publication), the Society of Dramatic Arts, the Musician's Society, or the 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, for example.

Leadership – Projects that explore a career path, are team-oriented, bridge diverse 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/or 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 scholarly work in the natural sciences, math and computer science, humanities, or the social sciences
- The dissemination of 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. For more information on the Quest program, please visit ltu.edu/arts_sciences/quest-program.asp.

DEGREE PROGRAMS
The college provides undergraduate degree programs in biology, chemistry, computer science, , data science, general studies, mathematical sciences (including a concentration in actuarial science) media arts and production, media communication, , physics, psychology, and technological humanities. Pre-health programs are arranged through the Department of Natural Sciences and pre-law programs 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 Media Arts and Production
The Associate of Arts in Media Arts and Production is a custom-designed degree program for Specs@LTU graduates. Students who are interested in broadening their knowledge and expanding their career options after completing the Broadcast Media Arts (BMA) or Digital Media Arts (DMA) certificate from Specs@LTU receive 24 credit hours of technical elective transfer credit toward the Associate of Arts in Media Arts and Production degree. Students gain a deeper understanding of topics including history, critical media studies, technical and professional communication, and advanced level hands-on media production skills. Students complete an additional 37 credit hours at

Lawrence Tech to earn the AAMAP degree. These graduates also have an option to apply their AAMAP credits toward a Bachelor of Arts in Media Communication if desired. The AAMAP program is offered exclusively to Specs@LTU students and former Specs Howard students. It is not open for general admission.

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.

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 Biology
Lawrence Tech's Bachelor of Science in Biology is a comprehensive degree program encompassing the breadth of biological disciplines. The biology curriculum prepares students for any of the multiple paths they may follow in the life sciences, including medical school and other health-related professional schools, graduate school, and work in biotechnology industries. Students who choose the B.S. in Biology receive extensive laboratory research experience and build the skills needed for the next generation of life scientists.

Bachelor of Science in Chemistry
Lawrence Tech's programs in chemistry place a strong emphasis on laboratory experience.

Lawrence Technological University

Students who choose a four-year B.S. in Chemistry with or without the concentrations described below 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, government, and education. Students are also well positioned for subsequent graduate work in chemistry, biochemistry, materials science, nanotechnology, or forensic science.

Concentration in *Chemical Biology and Biochemistry:* Recent advances in the life sciences and in biotechnology have created industries with a deep need for scientists who are well versed in both biology and chemistry. Graduates of this program are well 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 many health-related professional schools including medical, dental, pharmacy, physician assistant, and veterinary schools.

Concentration in *Engineering Chemistry*: 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.

Concentration in *Environmental Science:* The concentration 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.

Computer science majors can focus on data science, data mining, game development, virtual environments, Web application development, networks, software, computer security, intelligent systems, autonomous robots and vehicles – 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.

Software development is a major emphasis of the program, and depending on their personal goals, students may choose from among these concentrations: Artificial Intelligence, Business Software Development, Cybersecurity, Game Software Development, Scientific Software Development, or Software Engineering. The opportunity to choose from these cutting-edge concentrations ensures that the degree earned will be ideally suited to current market demands as well as the student's personal interests and career goals.

The *Artificial Intelligence* concentration focuses on developing algorithms to deal with Big Data such as machine learning, deep learning, data mining, and pattern recognition. This concentration gives students a competitive edge in today's advance technological landscape. It will also provide an avenue to pursue a master's degree in cutting-edge artificial intelligence technologies solving complex problems like autonomous vehicles, big data mining, computer vision, natural language processing, and robotics.

The *Cybersecurity* concentration provides students with opportunities to integrate education and training with the application of problem-solving skills in the lab environment to examine the multi-faceted nature of computer security. It covers the fundamental concepts such as cryptography, threats and vulnerabilities, cybersecure system design from hardware to software, and cutting-edge machine learning and IoT systems. Students will develop a security-oriented way of thinking with deeper understanding of threats and building countermeasures to defend against them.

The *Scientific Software Development* concentration offers the computer science graduate maximum flexibility. A well-balanced background in calculus and physics is essential to understand and create scientific applications. Since computer science is based, to a large degree, on mathematics, the more mathematics the student understands, the more satisfying computer science courses will be. For students interested in application development or the science of computing who have strong mathematical skills, this concentration is the best choice.

A variation of the Scientific Software Development concentration has been developed for students interested in pursuing *Game Software Development*. Open electives are replaced by specific courses designed to provide software development experience related to the video game industry.

All computer science concentrations require mathematics, but some concentrations focus more on programming that do not require higher order mathematics or physics. The *Business Software Development* concentration may be the ideal choice for students interested in web, database, and business application development without intensive higher-level mathematics.

The *Software Engineering* concentration teaches innovative processes, methodologies, and tools to improve the production, 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 earn the expertise to satisfy the most exacting customer requirements, achieve optimum efficiency in software design, reduce production and maintenance costs, improve system reliability, and enhance system security.

Direct-Entry Master of Science in Computer Science

The 4+1 Master of Science in Computer Science program is an accelerated program for highly motivated and high achieving first year students to earn both a bachelor's and master's degree in five years. Graduates of this program gain a competitive edge for an industry career at a higher salary. This is also an excellent pathway for students interested in pursuing a Ph.D. in computer science. The undergraduate portion of this program is based on the Scientific Software Development, Artificial Intelligence, or Cybersecurity concentrations explained above. The curriculum flow chart for this innovative five-year program is included in this packet.

You may use the open electives in any of these programs/concentrations to further customize your degree. Your advisor can help you construct a program specifically designed to fit your needs.

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 complete the certificate.

Certificate in Game Software Development

The undergraduate certificate in Game Software Development consists of 13 credit hours and is an exciting option for students interested in developing programming skills for games. These skills are foundational to join the rapidly expanding and biggest entertainment industry in the world. Students will learn how to make their own games, work in interdisciplinary teams, and help shape the future of this emerging art form with other diverse and passionate game developers. Students must earn a 2.0 GPA in all courses to complete the certificate.

Bachelor of Science in Data Science

The availability, collection and dissemination of data is at an all-time high. Computing power of unprecedented levels allow universities and companies the ability to research complex data sets in a variety of ways such as to determining new, effective vaccines, analyzing financial risk, creating efficient supply chains, and teaching a car to drive on its own. Data science is one of the fastest growing fields in academics, especially among women and underrepresented students; a field that is commensurate with STEM-related disciplines.

The *Data Science* program is a stand-alone BS degree in Mathematics and Computer Science but it is interdisciplinary in scope with ties to the Marburger STEM center, the College of Engineering, and the College of Business and Information Technology. The degree combines mathematics, statistics, big data, data mining, artificial intelligence, machine learning, and bioinformatics. This theory and practice approach provides students with a truly interdisciplinary education and the ability to study complex data sets as well as understand the patterns and hidden puzzles that each set can reveal. Students will work on projects focused in medicine, biomedical engineering, physics, artificial intelligence, big data and many other exciting fields. Students will complete a year-long senior project to show mastery of the skills.

Bachelor of Science in Mathematical Sciences

Lawrence Tech's Bachelor of Science in Mathematical Sciences is an interdisciplinary program that gives you the opportunity to tailor your degree for the profession you wish to pursue. In addition to the Applied Sciences and Actuarial Science concentrations, you can choose elective courses that encompass a wide spectrum of topics to prepare you for medical or graduate school or the business world. Your professors will also help you develop a strong capstone research project that will enhance your competitiveness.

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:

Applied Science – This 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.

Actuarial Science – Actuarial science is listed as one of the hottest degrees in 2021. Companies are in need of more professionals in this area than are currently available so students who major in actuarial science will have great opportunities for employment after graduation. This concentration is especially designed to prepare the student to take and pass the first two professional exams and get you an edge up on other students entering this highly profitable field.

Bachelor of Arts in Media Communication

Lawrence Tech's Bachelor of Arts in Media Communication program aims to prepare students for careers in broadcast news, corporate communication, digital marketing, sports media, and entertainment fields. Courses cover topics including cinematography, broadcast television production, on-camera talent and performance training, film and video editing, writing for electronic and print media, digital marketing, social media, audio production, digital graphics, and critical media studies. The curriculum gives students the opportunity to develop analytical thinking and communication skills. Students are engaged with a hands-on approach to understanding media technology. The cornerstone of this distinctive program is a strong emphasis on ethics and civic responsibility. Internships provide real-world experience in film/video production, broadcast production, event production, audio production, digital marketing, and other opportunities to expand the students' base of expertise.

The Media Communication program at Lawrence Tech offers a concentration in Film, Television, and Video Production

Film, Television, and Video Production – This 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 media 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 a solid foundation in media studies, film studies, communication and writing that will serve them well in a variety of media careers;
- become leading-edge producers, directors, writers, on-camera anchors, reporters, editors, technicians, or related communication professionals who can work independently or in teams; and
- showcase their creative and technical ability in a digital portfolio that represents the best of their original productions.

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, using the latest industry standard media technology.

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 Ascension Michigan 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 Ascension Michigan.

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
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.

In the 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.

Concentration in Computer Science – This is a physics degree organized around a deeper connection with computer science. The electives of the physics degree are used toward computer science courses. Traditional physics courses include Electricity and Magnetism, Quantum Mechanics, Thermal and Statistical Physics. All of these are extremely valuable for connecting any computational career to technological jobs. Computer science training begins in the first semester, and builds toward a focus on numerical analysis. Tailoring courses toward students' interests in computer science areas such as artificial intelligence or data analysis is encouraged. Students complete senior projects that combine physics and computer science expertise like Monte Carlo modeling, big data analysis, and machine learning. "Big Data" is becoming more important in physics as large databases of information are gathered from giant experiments (such as the Large Hadron Collider, or the recently launched James Webb Space Telescope). The ability to process that data to uncover new physical measurements and discoveries will be an important skill of the coming decades in science.

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.

Bachelor of Science in Technological Humanities
The Technological Humanities program integrates the cultural, social, and historical literacy of a traditional liberal arts education with practical training in technological skills. In doing so, it uniquely prepares undergraduate students to navigate an increasingly technological workforce. By combining a liberal arts core, coding courses, technology electives, and an emphasis on interdisciplinary research, the program offers opportunities for students with a wide range of interests. For instance, students skilled in computer science, mathematics, or design can develop these skills while exploring the socio-cultural implications of technological developments. Similarly, students with an interest in communication, writing, or cultural history can couple these interests with technological applications that can open new career opportunities. By using the humanities as a platform for connecting with LTU's cutting-edge STEM identity, students have the opportunity to expand the boundaries of the liberal arts, forging new collaborations with information technology, engineering, and design. As a result, graduates are distinctively credentialed to work as humanists in STEM fields.

The 121-credit hour Technological Humanities Program develops
- Foundational critical thinking skills in the humanities, mathematics, and natural sciences through the University's Core Curriculum
- Foundational computer science skills and their elaboration into an area of advanced technical expertise, drawing on the many STEM resources provided by LTU and guided by the student's own interests
- Professional communication skills through courses in speech, collaborative communication, and technical editing
- Liberal arts and social science analytical methodologies, with a particular emphasis on understanding cultural adaptation to technological change
- Interdisciplinary research skills and protocols culminating in an original capstone research project.

The Technological Humanities curriculum is designed to be flexible, in order to facilitate the addition of minors, certificates, and/or participation in co- and extra- curricular programs that credential graduates' interdisciplinary training. Students can use their technological applications electives to pursue
- certificates and minors in Design Thinking, Building Information Modeling, Embedded Systems, Game Design, Graphic Design, Nanotechnology, or Business Administration
- projects linked to Honors, Quest, or Grand Challenge Scholars programs
- senior internships or practicums geared toward fostering employment upon graduation.

Lawrence Technological University

Undeclared

The College of Arts and Sciences welcomes students interested in exploring their educational options prior to declaring a major. While completing Core Curriculum 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.

Arts and Sciences Undeclared

In specific circumstances, a student whose high school GPA is just below the point of entry for admission into their program of interest might be admitted into the Arts and Sciences Undeclared (ASUD) program. That student will then take courses necessary to prepare them for the intended program of study. These courses are based on a student's placement scores.

Academic advisors work closely with ASUD students to select courses which will count toward the student's intended degree, provided that all prerequisites have been satisfied.

A student who has been admitted into the ASUD program based on high school GPA will be eligible to declare a major following the successful completion of twenty-four credits and an LTU GPA eligible for the intended program, or the discretion of the ASUD program director.

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 [1]	Biology 1	BIO 1153 or placement
BIO 1223 [1]	Biology 2	BIO 1153 or placement
BIO 2313	Microbiology	BIO 1213
CHM 1154 [2]	Intro. to Chemical Principles	MCS 0054 (co-requisite) or higher [3]
CHM 1213	University Chemistry 1	MCS 1074 (co-requisite) or higher [3], plus CHM 1154 or chem placement
CHM 1223	University Chemistry 2	CHM 1213
CHM 2103	General, Organic and Biochemistry	BIO 1213 + CHM 1213
CHM 2313	Organic Chemistry 1	CHM 1213 + CHM 1221
GLG 1103	Geology	None
PHY 1154 [2]	Intro. to Physical Principles	MCS 1074 or higher [3]
PHY 1213	Introductory Astronomy	None

PHY 2213	College Physics 1	MCS 1074 or higher [3], 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

[1] *BIO 1213 and BIO 1223 are independent. Neither is prerequisite to the other.*
[2] *CHM 1154, , and PHY 1154 have integrated laboratory components that satisfy the requirement for a laboratory course as well as a natural sciences lecture course.*
[3] *MCS 1254 excluded*

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 [4]	Introduction to Chemical Principles	None
CHM 1221	University Chemistry 1 Laboratory	CHM 1213
CHM 2101	General Organic, and Biochemistry Laboratory	CHM 2103
PHY 1154 [4]	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

[4] *CHM 1154 and PHY 1154 have integrated laboratory components that satisfy the requirement for a laboratory course as well as a natural sciences lecture course.*

ASSOCIATE OF ARTS IN MEDIA ARTS AND PRODUCTION
TOTAL SEMESTER CREDIT HOURS: 61
Eligible students receive 24 credit hours of technical elective transfer credit upon completion of the Broadcast Media Arts (BMA) or Digital Media Arts (DMA) certificate from Specs@LTU. The following 37 credit hours must be taken at Lawrence Tech:

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
COM 2103	Technical and Professional Communication	3
MCO 2543	Writing for Electronic & Print Media	3
MCO xxx3 (x3)	Media Communication Electives (3)	9
LLT 1213	World Masterpieces 1	3

LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of the American Experience	3
SSC 2423	Development of the American Experience	3
MCS 1254	Geometry in Art	4
BIO/CHM/GLG/ PHY/PSC xxx3	Natural Science Elective	3

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 GENERAL STUDIES
TOTAL 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 1xx3/4	Mathematics Elective 1		3/4
GEN xxx6	General Electives		6
		TOTAL	15/16

Second Semester

Course Number	Subject		Cr. Hrs.
LLT 1213	World Masterpieces 1		3
COM 2103	Technical and Professional Communication		3
MCS 1xx4	Mathematics Elective		4
GEN xxx6	General 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
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Science Elective 1		3
GEN xxx6	General Electives		6
		TOTAL	15

Fourth Semester

Course Number	Subject		Cr. Hrs.
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 2		3
BIO/PHY/CHM GLG/FSC/PSCxxx1	Natural Sciences Lab Elective		1
GEN xxx10	General Electives		10
		TOTAL	14

Lawrence Technological University

While enrolled in the general studies program, students preparing to enter Lawrence Tech's four-year degree programs will complete courses that fulfill the Core Curriculum requirements common to all curricula. In most cases, students will also have the opportunity to complete developmental courses specific to their potential 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.

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, or email scidean@ltu.edu.

CERTIFICATE IN TECHNICAL AND PROFESSIONAL COMMUNICATION
TOTAL CREDIT HOURS: 15

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
COM 2/3/4xxx3	Communication Electives	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, email humchair@ltu.edu, or visit room S225 in the Science Building.

BACHELOR OF SCIENCE IN BIOLOGY
TOTAL 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 –**or**–	Calculus 1 –**or**–	
MCS 1224	Survey of Calculus	4
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.

Course Number	Subject		Cr. Hrs.
BIO 1223	Biology 2		3
BIO 1231	Biology 2 Lab		1
CHM 1223	University Chemistry 2		3
CHM 1231	University Chemistry 2 Lab		1
LLT 1213	World Masterpieces 1		3
MCS 2124	Statistics		4
		TOTAL	15

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2313	Organic Chemistry 1		3
CHM 2311	Organic Chemistry 1 Lab		1
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
PSY/SSC xxx3	PSY/SSC Elective		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
BIO 2313	Microbiology		3
BIO 2321	Microbiology Lab		1
CHM 2323	Organic Chemistry 2		3
CHM 2321	Organic Chemistry 2 Lab		1
PHY 2223	College Physics 2		3
PHY 2231	College Physics 2 Lab		1
SSC 2423	Development of American Experience		3
		TOTAL	15

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
BIO 3203	Anatomy and Physiology A		3
BIO 3201	Anatomy and Physiology Lab		1
CHM 3403	Biochemistry		3
CHM 3411	Biochemistry Lab		1
BIO 2323*	Molecular Genetics*		3
GEN xxx3	General Elective		3
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
BIO 3303	Anatomy and Physiology B		3
BIO 3/4xx3	BIO Junior/Senior Tech Elective		3
COM 2103	Technical and Prof. Communication		3
PSC 3002	Leadership in Scientific Research		2
GEN xxx3	General Elective		3
		TOTAL	14

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
BIO 4103*	Evolution*	3
BIO 3613	Ecology	3
BIO 4912	Senior Project 1**	2
CHM/BIO 3/4xx3	CHM/BIO Junior/Senior Tech Elective	3
LLT 3/4xx3	LLT Junior/Senior Elective	3
GEN 3/4xx3	General Junior/Senior Elective	3
	TOTAL	17

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	CHM/BIO Technical Elective	3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective	3
GEN 3/4xx3	General Junior/Senior 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.

**Students must complete a minimum of 4 credits of senior project. They may elect to increase the number of credits to an overall maximum of 6 credits (at the discretion of the senior project advisor). The extra credits may be allowed to count towards general or tech elective credits. In addition, students may opt to alter the distribution of the credit hours (3 credits in the fall and 1 credit in the spring, for example) to help achieve full time student status.*

For more information contact the Department of Natural Sciences at 248.204.3600, email nschair@ltu.edu, or visit room 322 in the Science Building.

BACHELOR OF SCIENCE IN CHEMISTRY
TOTAL CREDIT HOURS: 124

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

Lawrence Technological University

Course Number	Subject	Cr. Hrs.
CHM 1223	University Chemistry 2	3
CHM 1231	University Chemistry 2 Lab	1
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
SSC 2423	Development of American Experience	3
	TOTAL	14

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 2313	Organic Chemistry 1	3
CHM 2311	Organic Chemistry 1 Lab	1
CHM 2343	Analytical Chemistry	3
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	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 2323	Organic Chemistry 2	3
CHM 2321	Organic Chemistry 2 Lab	1
LLT 1223	World Masterpieces 2	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
GEN xxx3	General Elective	3
	TOTAL	14

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 3434	Physical Chemistry 2	4
CHM 3441	Physical Chemistry 2 Lab	1
CHM 3452*	Intermediate Inorganic Chemistry*	2
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
COM 2103	Technical and Prof. Communication	3
	TOTAL	14

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 3002	Leadership in Scientific Research	2
PSY/SSC xxx3	PSY/SSC Elective	3
GEN 3/4xxx3	Junior/Senior General Elective	3

Lawrence Technological University

		TOTAL	17

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 3463*	Advanced Synthesis Lab*		3
CHM 4002	Computational Chemistry 2		2
CHM 4023	Nanomaterials		3
CHM xxx3	CHM Elective		3
CHM 4912**	Senior Project 1		2
LLT 3/4xx3	Junior/Senior LLT Elective		3
		TOTAL	16

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
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
GEN xxx6	General 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.

**Students must complete a minimum of 4 credits of senior project. They may elect to increase the number of credits to an overall maximum of 6 credits (at the discretion of the senior project advisor). The extra credits may be allowed to count towards general or tech elective credits. In addition, students may opt to alter the distribution of the credit hours (3 credits in the fall and 1 credit in the spring, for example) to help achieve full time student status.*

For more information contact the Department of Natural Sciences at 248.204.3600, email nschair@ltu.edu, or visit room 322 in the Science Building.

Concentration in Chemical Biology and Biochemistry
TOTAL 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 1231	University Chemistry 2 Lab		1
LLT 1213	World Masterpieces 1		3
MCS 1424	Calculus 2		4
		TOTAL	15

Sophomore Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2313	Organic Chemistry 1		3
CHM 2311	Organic Chemistry 1 Lab		1
MCS 2124	Statistics		4
PHY 2213	College Physics 1		3
PHY 2221	College Physics 1 Lab		1
SSC 2413	Foundations of American Experience		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2323	Organic Chemistry 2		3
CHM 2321	Organic Chemistry 2 Lab		1
PHY 2223	College Physics 2		3
PHY 2231	College Physics 2 Lab		1
GEN xxx3	General Elective		3
SSC 2423	Development of American Experience		3
LLT 1223	World Masterpieces 2		3
		TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2343	Analytical Chemistry		3
CHM 2352	Analytical Chemistry Lab		2
CHM 3452	Intermediate Inorganic Chemistry*		2
BIO 3203	Anatomy and Physiology A		3
BIO 3201	Anatomy and Physiology Lab		1
PSY/SSC xxx3	PSY/SSC Elective		3
COM 2103	Technical and Prof. Communication		3
		TOTAL	17

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*	Advanced Organic Chemistry*	3
PSC 3002	Leadership in Scientific Research	2
BIO 3303	Anatomy and Physiology B	3
GEN xxx3	General Elective	3
	TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
BIO 3323*	Molecular Genetics*	3
CHM/BIO 3/4xx3	CHM/BIO Junior/Senior Technical Elective	3
CHM 4912**	Senior Project 1	2
LLT 3/4xx3	LLT Junior/Senior Elective	3
	TOTAL	15

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
PSY/SSC 3/4xx3	PSY/SSC 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.

**Students must complete a minimum of 4 credits of senior project. They may elect to increase the number of credits to an overall maximum of 6 credits (at the discretion of the senior project advisor). The extra credits may be allowed to count towards general or tech elective credits. In addition, students may opt to alter the distribution of the credit hours (3 credits in the fall and 1 credit in the spring, for example) to help achieve full time student status.*

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.

Concentration in Engineering Chemistry
TOTAL 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
SSC 2413	Foundations of American Experience	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 1223	University Chemistry 2	3
CHM 1231	University Chemistry 2 Lab	1
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
SSC 2423	Development of American Experience	3
	TOTAL	14

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 2313	Organic Chemistry 1	3
CHM 2311	Organic Chemistry 1 Lab	1
EGE 1102	Engineering Computer Applications Lab	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	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
CHM 2323	Organic Chemistry 2	3
CHM 2321	Organic Chemistry 2 Lab	1
EGE 1023	Engineering Materials	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	14

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	Intermediate Inorganic Chemistry	2
CHM 4912	Senior Project 1[*]	2
CHM 4922	Senior Project 2[*]	2
CHM xxx9	Chemistry Electives[**]	9
COM 2103	Technical and Prof. Communication	3
COM 4001	Pathways Capstone Lab	1
EEE 2123	Circuits and Electronics	3
EME 2011	Engineering 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	Engineering Numerical Methods	3
EME 3/4xx3	Engineering Electives	6
LLT 3/4xx3	LLT Junior/Senior Elective	3
PSC 3001	Intro. to Projects in Science	1
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective	3
PSY/SSC xxx3	PSY/SSC Elective	3
GEN xxx3	General Elective	3
	TOTAL	67

[*]*Dual majors may substitute the corresponding engineering course, providing the project topic is approved in writing by both departments.*
[**]*Students must complete a minimum of 4 credits of senior project. They may elect to increase the number of credits to an overall maximum of 6 credits (at the discretion of the senior project advisor). The extra credits may be allowed to count towards general or tech elective credits. In addition, students may opt to alter the distribution of the credit hours (3 credits in the fall and 1 credit in the spring, for example) to help achieve full time student status. 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, email nschair@ltu.edu, or visit room 322 in the Science Building.

Concentration in Environmental Science
TOTAL CREDIT HOURS: 124

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

Course Number	Subject		Cr. Hrs.
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 1231	University Chemistry 2 Lab		1
BIO 1223	Biology 2		3
BIO 1231	Biology 2 Lab		1
LLT 1213	World Masterpieces 1		3
MCS 1424	Calculus 2		4
		TOTAL	15

Sophomore Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2313	Organic Chemistry 1		3
CHM 2311	Organic Chemistry 1 Lab		1
CHM 2343	Analytical Chemistry		3
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	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2323	Organic Chemistry 2		3
CHM 2321	Organic Chemistry 2 Lab		1
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	14

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	Intermediate Inorganic Chemistry*		2
CHM 3403	Biochemistry		3
CHM 3411	Biochemistry Lab		1
GLG 1103	Geology		3
COM 2103	Technical and Prof. Communication		3
		TOTAL	17

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 2124	Statistics		4
PSC 3002	Leadership in Scientific Research		2
PSY/SSC xxx3	PSY/SSC Elective		3
		TOTAL	15

Senior Year (Example)
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 3463*	Advanced Synthesis Lab*		3
CHM 4002	Computational Chemistry 2		2
CHM 3383*	Environmental Chemistry*		3
CHM 4912**	Senior Project 1		2
LLT 3/4xx3	LLT Junior/Senior Elective		3
GEN 3/4xx3	Junior/Senior General 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
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
GEN xxx3	General 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.

**Students must complete a minimum of 4 credits of senior project. They may elect to increase the number of credits to an overall maximum of 6 credits (at the discretion of the senior project advisor). The extra credits may be allowed to count towards general or tech elective credits. In addition, students may opt to alter the distribution of the credit hours (3 credits in the fall and 1 credit in the spring, for example) to help achieve full time student status.*

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BACHELOR OF SCIENCE IN COMPUTER SCIENCE
Artificial Intelligence Concentration
TOTAL CREDIT HOURS: 123
AI is at the core of the ongoing tech revolution and its impact on society and industry will be profound. Students majoring in AI at LTU will not only learn the key components of these exciting fields but will develop skills and expertise that will allow them to excel in this area. As robots

become more common in a wide variety of industries, skills in robot programming and management will become more valuable.

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1243	Foundations of CS	3
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
PSY/SSC xxx3	PSY/SSC 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
MCS 1111	Coding Club (1st of 2)	1
	TOTAL	15

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 3863	Linear Algebra	3
MCS 2111	MCS Seminar.	1
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 3543	Intro. to Database Systems	3
MCS 3663	Computer Architecture and Assembly	3
MCS xxx3	Math Elective*	3
MCS xxx3	MCS Elective	3
PHY 2413	University Physics 1	3

Course Number	Subject		Cr. Hrs.
PHY 2421	University Physics 1 Lab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4663	Operating Systems		3
MCS 4993	MCS Topics Neural Networks, Deep Learning w/ Python		3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 1		3
MCS 4633	Artificial Intelligence.		3
GEN xxx3	General Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4613	Computer Networks		3
MCS 4833	Senior Project		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
MCS 1111	Coding Club (2nd of 2)		1
MCS 5993	MCS Topics: Text Mining & Data Analytics		3
COM 4001	Pathways Capstone Lab		1
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective		3
MCS 4643	Comparative Prog. Languages		3
MCS 4653	Theory/Computation		3
MCS 4843	Senior Project 2		3
MCS 5623	Machine Learning & Patter Recognition		3
		TOTAL	15

Select from MCS 2423 Differential Equations or MCS 3403 Probability & Statistics.

Business Software Development Concentration
TOTAL 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 1243	Foundations of CS	3

Course Number	Subject	Cr. Hrs.
MCS 1074*	Precalculus*	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
MCS 1111	Coding Club (1st of 2)	1
	TOTAL	15

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
PSY/SSC xxx3	PSY/SSC Elective	3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 1	3
BIO/PHY/CHM GLG/FSC/PSCxxx1	Natural Sciences Lab Elective	1
	TOTAL	17

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
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 2	3
MCS 1111	Coding Club (2nd of 2)	1
MCS 2111	MCS Seminar	1
	TOTAL	15

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 2613	Software Engineering 2	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 4663	Operating Systems	3
MCS 3633	Functional Programming	3

Course Number	Subject		Cr. Hrs.
MCS 3/4xx3	MCS Jr/Sr Elective		3
GEN xxx3	General Elective		3
MCS 3/4xx3	MCS Jr/Sr Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4613	Computer Networks		3
MCS 4833	Senior Project		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
MCS 4993	Topics in MCS		3
GEN xxx3	General Electives		3
COM 4001	Pathways Capstone Lab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 3/4xx3	LLT 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.

Cybersecurity Concentration
TOTAL CREDIT HOURS: 123
Cybersecurity graduates are in high demand and LTU's program will provide students with the flexibility and expertise that companies are looking for. Jobs are abundant in areas of financial services, health care, government, manufacturing and retail. Data is everyone and people and companies need to protect this invaluable resource. At LTU you will not only learn the skills to work in this exciting field, you will also have the opportunity to explore applications such as information technology, software and hardware security and business.

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1001	Pathways to Research Careers		1
COM 1103	College Composition		3
MCS 1243	Foundations of CS		3
MCS 1414	Calculus 1		4
SSC 2413	Foundations of American Experience		3
		TOTAL	14

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
PSY/SSC xxx3	PSY/SSC 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
MCS 1111	Coding Club (1st of 2)		1
		TOTAL	15

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 3863	Linear Algebra		3
MCS 2111	MCS Seminar		1
		TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3543	Intro. to Database Systems		3
MCS 3663	Computer Architecture and Assembly		3
MCS xxx3	Math Elective*		3
MCS 4993	Topics in CS Security		3
PHY 2413	University Physics 1		3
PHY 2421	University Physics 1 Lab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4663	Operating Systems		3
MCS 4993	Topics MCS:		
	Machine Learn. and Embed. Sys. Security.		3
BIO/PHY/CHM/			
GLG/FSC/PSCxxx3	Natural Sciences Elective 1		3
MCS 5813	Intro to Computer Security		3
GEN xxx3	General Elective		3
		TOTAL	15

Senior Year

Lawrence Technological University

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective	3
MCS 1111	Coding Club (2nd of 2)	1
MCS 4993	MCS Topics:	
	Malware Analysis and Rev. Engineering	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 4653	Theory/Computation	3
MCS 4843	Senior Project 2	3
MCS 5993	Advanced Computer Network & Security	3
	TOTAL	15

Select from MCS 2423 Differential Equations or MCS 3403 Probability & Statistics

Game Software Development Concentration
TOTAL 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 1243	Foundations of CS	3
MCS 1414	Calculus 1	4
MCS 1643	Intro. to Games and Animation	3
	TOTAL	17

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.
MCS 2513	Software Engineering 1		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.
GAM 2213	History of Game Design		3
COM 2103	Technical and Prof. Communication		3
MCS 3663	Computer Architecture and Assembly		3
CRW 2513	Creative Writing		3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 1		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3543	Intro. to Database Systems		3
GAM 3313	Integrated Game Studio 2		3
MCS xxx3	MCS Elective		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 3/4xx3	LLT Junior/Senior Elective	3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS xxx3	MCS Elective	3
MCS 4843	Senior Project 2	3
	TOTAL	15

Scientific Software Development Concentration
TOTAL CREDIT HOURS: 124
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 1243	Foundations of CS	3
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
PSY/SSC xxx3	PSY/SSC 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
MCS 1111	Coding Club (1st of 2)	1
	TOTAL	15

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

Course Number	Subject		Cr. Hrs.
MCS 3633	Functional Programming		3
GEN xxx3	General Elective		3
MCS 2111	MCS Seminar		1
		TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3543	Intro. to Database Systems		3
MCS 3663	Computer Architecture and Assembly		3
MCS xxx3	Math Elective*		3
PHY 2413	University Physics 1		3
PHY 2421	University Physics 1 Lab		1
MCS 3863	Linear Algebra		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4663	Operating Systems		3
MCS 4993	Topics in MCS		3
PHY 2423	University Physics 2		3
PHY 2431	University Physics 2 Lab		1
GEN xxx3	General Elective		3
GEN 3/4xx3	Junior/Senior General Elective		3
		TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4613	Computer Networks		3
MCS 4833	Senior Project		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
MCS 1111	Coding Club (2nd of 2)		1
MCS xxx3	MCS Elective		3
COM 4001	Pathways Capstone Lab		1
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective		3
MCS 4643	Comparative Prog. Languages		3
MCS 4653	Theory/Computation		3
MCS 4843	Senior Project 2		3
GEN 3/4xx3	Junior/Senior General Elective		3
		TOTAL	15

Select from MCS 2423 Differential Equations or MCS 3403 Probability & Statistics

Software Engineering Concentration
TOTAL CREDIT HOURS: 123

Lawrence Technological University

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 1243	Foundations of CS	3
MCS 1074*	Precalculus*	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
MCS 1111	Coding Club (1st of 2)	1
	TOTAL	15

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	MCS Elective	3
BIO/PHY/CHM/ GLG/FSC/PSCxx3	Natural Science Elective 1	3
MCS 2111	MCS Seminar	1
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
MCS 3603	Java		3
MCS 3663	Computer Architecture and Assembly		3
PSY/SSC xxx3	PSY/SSC Elective		3
BIO/PHY/CHM/ GLG/FSC/PSCxx3	Natural Science Elective 2		3
BIO/PHY/CHM/ GLG/FSC/PSCxx1	Natural Sciences Lab Elective		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 4993	Topics in MCS		3
MCS xxx3	MCS Elective		3
MCS 1111	Coding Club (2nd of 2)		1
		TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective		3
MCS 4513	Software Quality and Proj. Mgmt.		3
MCS 4613	Computer Networks		3
MCS 4653	Theory of Computation		3
MCS 4833	Senior Project		3
COM 4001	Pathways Capstone Lab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4643	Comparative Prog. Languages		3
MCS 4843	Senior Project 2		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
GEN 3/4xx3	Junior/Senior General Elective		3
MCS 3/4xx3	Junior/Senior MCS Elective		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, email mcschair@ltu.edu, or visit room S120 in the Science Building.

4+1 with BSCS - Artificial Intelligence Concentration

TOTAL CREDIT HOURS: 123 + 21 Graduate credits = 144 total credits

Artificial Intelligence (AI) is at the core of the ongoing tech revolution and its impact on society and industry will be profound. Students majoring in AI at LTU will not only learn the key components of these exciting field but will develop skills and expertise that will allow them to excel in this area. If robots become common in everyday business, someone at the company will need to program and manage the robots.

Freshman Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1243	Foundations of CS	3
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
PSY/SSC xxx3	PSY/SSC 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
MCS 1111	Coding Club (1st of 2)	1
	TOTAL	15

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 3863	Linear Algebra	3
MCS 2111	MCS Seminar.	1
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 3543	Intro. to Database Systems	3

Course Number	Subject	Cr. Hrs.
MCS 3663	Computer Architecture and Assembly	3
MCS xxx3	Math Elective*	3
GEN xxx3	General Elective	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 4663	Operating Systems	3
MCS 4993	MCS Topics Deep Learning and Neural Networks	3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 1	3
MCS 5323	Artificial Intelligence.	3
GEN xxx3	General Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective	3
MCS 1111	Coding Club (2nd of 2)	1
MCS 5993	MCS Topics: Text Mining and Data Analytics	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 5243	Theory/Computation	3
MCS 4843	Senior Project 2	3
MCS 5623	Machine Learning & Patter Recognition	3
	TOTAL	15

FIFTH YEAR

Fall Semester

Course Number	Subject	Cr. Hrs.
MCS 5803	Algorithm Design and Analysis	3
MCS 5xx3	Computer Science Elective	3
MCS 5993	Topics in Computer Science	3
	TOTAL	9

Spring Semester

Course Number	Subject	Cr. Hrs.
MCS 5xx3	Computer Science Elective	3
MCS 5993	Topics in Computer Science	3

Choose option A. or option B.

A.   Research or Project Option:

Course Number	Subject	Cr. Hrs.
MCS 7013	Collaborative Research Project 1	3
MCS 7033	Collaborative Research Project 2	3

B.   Master's Thesis Option:

Course Number	Subject	Cr. Hrs.
MCS 7113	Master's Thesis 1	3
MCS 7133	Master's Thesis 2	3
	TOTAL	21

Select from MCS 2423 Differential Equations or MCS 3403 Probability & Statistics

4+1 with BSCS - Cybersecurity Concentration
TOTAL CREDIT HOURS: 123 + 21 Graduate credits = 144 total credits
Cybersecurity graduates are in high demand and LTU's program will provide students with the flexibility and expertise that companies are looking for. Jobs are abundant in areas of financial services, health care, government, manufacturing and retail. Data is everyone and people and companies need to protect this invaluable resource. At LTU you will not only learn the skills to work in this exciting field, you will also have the opportunity to explore applications such as information technology, software and hardware security and business.

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1243	Foundations of CS	3
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
PSY/SSC xxx3	PSY/SSC 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

Course Number	Subject		Cr. Hrs.
MCS 1111	Coding Club (1st of 2)		1
		TOTAL	15

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 3863	Linear Algebra		3
MCS 2111	MCS Seminar		1
		TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3543	Intro. to Database Systems		3
MCS 3663	Computer Architecture and Assembly		3
MCS xxx3	Math Elective*		3
GEN xxx3	General Elective		3
PHY 2413	University Physics 1		3
PHY 2421	University Physics 1 Lab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4663	Operating Systems		3
MCS 4993	Topics MCS: Machine Learn. and Embed. Sys. Security.		3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Sciences Elective 1		3
MCS 5813	Intro to Computer Security		3
MCS 5993	Topics in CS (Security)		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4613	Computer Networks		3
MCS 4833	Senior Project		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
MCS 1111	Coding Club (2nd of 2)		1
MCS 4993	MCS Topics: Malware Analysis & Rev. Engineering		3
COM 4001	Pathways Capstone Lab		1
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective		3
MCS 4643	Comparative Prog. Languages		3

MCS 5243	Theory/Computation	3
MCS 4843	Senior Project 2	3
MCS 4993	Advanced Computer Network and Security	3
	TOTAL	15

FIFTH YEAR
Fall Semester

Course Number	*Subject*	*Cr. Hrs.*
MCS 5803	Algorithm Design and Analysis	3
MCS 5xx3	Computer Science Elective	3
MCS 5993	Topics in Computer Science	3
	TOTAL	9

Spring Semester

Course Number	*Subject*	*Cr. Hrs.*
MCS 5xx3	Computer Science Elective	3
MCS 5993	Topics in Computer Science	3

Choose option A. or option B.
A.   Research or Project Option:

Course Number	*Subject*	*Cr. Hrs.*
MCS 7013	Collaborative Research Project 1	3
MCS 7033	Collaborative Research Project 2	3

B.   Master's Thesis Option:

MCS 7113	Master's Thesis 1	3
MCS 7133	Master's Thesis 2	3
	TOTAL	21

*Select from MCS 2423 Differential Equations or MCS 3403 Probability & Statistics

4+1 with BSCS - Scientific Software Development Concentration
TOTAL CREDIT HOURS: 124 + 21 Graduate credits = 145 total credits
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 1243	Foundations of CS	3
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	14

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
PSY/SSC xxx3	PSY/SSC 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
MCS 1111	Coding Club (1st of 2)	1
	TOTAL	15

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
GEN xxx3	General Elective	3
MCS 2111	MCS Seminar	1
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 3543	Intro. to Database Systems	3
MCS 3663	Computer Architecture and Assembly	3
MCS xxx3	Math Elective*	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 3863	Linear Algebra	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 4663	Operating Systems	3
MCS 4993	Topics in MCS	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
GEN xxx3	General Elective	3
GEN 3/4xx3	Junior/Senior General Elective	3
	TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.

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.

CERTIFICATE IN GAME SOFTWARE DEVELOPMENT
TOTAL CREDIT HOURS: 13

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 1643	Introduction to Computer Games and Animation	3
MCS 1653	Game Genre Development	3
MCS 3563	Game Design	3
	TOTAL	13

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 DATA SCIENCE
TOTAL CREDIT HOURS: 125

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1243	Foundations of Computer Science	3
SSC 2413	Foundations of American Experience	3
MCS 1414	Calculus 1	4

Lawrence Technological University

		TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2423	Development of American Experience	3
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
MCS 2124	Statistics	4
LLT 1213	World Masterpieces 1	3
	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
MCS 2514	Computer Science 2	4
MCS 1111	Coding Club – Python	1
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Prof. Communication	3
MCS 2111	MCS Seminar	1
MCS 2513	Software Engineering	3
MCS 2534	Data Structures	4
MCS 2403	Introduction to Data Science	3
MCS 3863	Linear Algebra	3
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 1111	Coding Club – R	1
MCS 3123	Applied Statistics	3
MCS 3543	Intro to Database Systems	3
MCS 4993	Topics: Text Mining and Data Analytics	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC/PSY xxx3	SSC/PSY Elective	3
MCS 3523	Math Modeling	3
MCS 5623	Machine Learning and Pattern Recognition	3
MCS 4633	Artificial Intelligence	3
PHY 2423	University Physics 2	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4833	Senior Project		3
SSC/PSY 3/4xx3	SSC/PSY Junior/Senior Elective		3
MCS 4993	Applied Regression Analysis		3
MCS 5713	Deep Learning and Neural Networks		3
MCS/PHY/IT 3/4xx3	MCS/PHY/IT Junior/Senior Elective		3
MCS 1111	Coding Club – Matlab		1
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 5723	Social Network Mining		3
MCS 4653	Theory of Computation		3
MCS 4843	Senior Project 2		3
LLT xxx3	Junior/Senior Elective		3
MCS/PHY/IT 3/4xx3	MCS/PHY/IT Junior/Senior Elective		3
		TOTAL	15

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES
Applied Science Concentration
TOTAL CREDIT HOURS: 124

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1001	Pathways to Research Careers		1
COM 1103	College Composition		3
BIO/PHY/CHM/ GLG/FSC/PSCxx3	Natural Science Elective 1		3
BIO/PHY/CHM/ GLG/FSC/PSCxx1	Natural Science Lab Elective		1
MCS 1243	Foundations of Computer Science		3
MCS 1414	Calculus 1		4
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 1213	World Masterpieces 1		3
MCS 1424	Calculus 2		4
MCS 1514	Computer Science 1		4
MCS 2124	Statistics		4
		TOTAL	15

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 1223	World Masterpieces 2		3

Course Number	Subject		Cr. Hrs.
SSC 2413	Foundations of American Experience		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	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of American Experience		3
MCS 2111	MCS Seminar		1
MCS 1111	Coding Club		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	15

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
MCS 3123	Applied Statistics		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3523	Math Modeling		3
MCS 3733	Partial Differential Equations		3
PSY/SSC xxx3	PSY/SSC Elective		3
GEN xxx6	General Electives		6
		TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4833	Senior Project		3
MCS 4813	Numerical Analysis 1		3
MCS 3/4xx3	MCS Junior/Senior Elective		3
MCS 4993	Topics in MCS		3
LLT 3/4xx3	LLT 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

MCS 3/4xx3	MCS Junior/Senior Elective	3
MCS 4993	Topics in MCS	3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective	3
GEN 3/4xx3	General Junior/Senior Elective	3
	TOTAL	16

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES
Actuarial Science Concentration
TOTAL 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
MCS 1243	Foundations of Computer Science	3
BIO/PHY/CHM/ GLG/FSC/PSCxx3	Natural Science Elective 1	3
BIO/PHY/CHM/ GLG/FSC/PSCxx1	Natural Science Lab Elective	1
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
MCS 2124	Statistics	4
SSC 2413	Foundations Amer. Exp.	3
LLT 1213	World Masterpieces 1	3
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3
MCS 1111	Coding Club	1
MCS 2414	Calculus 3	4
MCS 2523	Discrete Math	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2423	Development of American Experience	3
MCS 2111	MCS Seminar	1
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3

Course Number	Subject		Cr. Hrs.
ACC xxx3	Accounting Elective		3
BIO/PHY/CHM/ GLG/FSC/PSC	Natural Science Elective 2		3
		TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3403	Probability and Statistics		3
SSC 2303	Principles of Economics		3
COM 2103	Technical and Prof. Communication		3
MCS 3723	Advanced Calculus		3
MCS 3123	Applied Statistics		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 3111	FM Prep		1
MCS 3523	Math Modeling		3
SSC 2403	Principles of Economics 2		3
MCS xxx3	MCS Elective		3
PSY/SSC xxx3	PSY/SSC Elective		3
		TOTAL	13

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 4833	Senior Project		3
FIN/MGT 3/4xx3	FIN/MGT Junior/Senior Elective		3
MCS 4813	Numerical Analysis		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
MCS 4993	Topics in MCS		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		3
LLT 3/4xx3	LLT Junior/Senior Elective		3
SSC 3523	Money and Banking		3
GEN 3/4xxx6	General Junior/Senior Electives		6
		TOTAL	16

DUAL MAJOR IN MATHEMATICAL SCIENCES

Students can earn a dual major in mathematics and another discipline by completing the degree requirements of both programs.

Lawrence Technological University

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 ARTS IN MEDIA COMMUNICATION
Film, Television and Video Production Concentration
TOTAL 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
GEN xxx3	General Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 1254	Geometry in Art	4
MCO 1013	Audio for TV and Video Production	3
MCO 2213	Intro to Film Studies	3
COM 2113	Speech	3
LLT 1213	World Masterpieces 1	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCO 2563	Intro. to Broadcast Studio	3
MCO 2543	Writing for Electronic and Print Media	3
MCO 3203	Camera for Broadcast	3
LLT 1223	World Masterpieces 2	3
MCO 3623	Adobe for Media	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCO3303	Video Editing	3
SSC 2413	Foundations of American Experience	3
COM 2103	Technical and Prof. Communication	3
GEN xxx3	General Elective	3
BIO/CHM/GLG/ PHY/PSC xxx3	Natural Sciences Elective 1	3
BIO/CHM/PHY xxx1	Natural Sciences Lab Elective	1
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCO 3633	Social Media	3
MCO xxx3	Film Studies Elective	3
SSC 2423	Development of American Experience	3
GEN xxx3	General Elective	3
BIO/CHM/GLG/ PHY/PSC xxx3	Natural Sciences Elective 2	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCO 3613	Advanced Broadcast Production	3
MCO 3913	Media Comm. Internship	3
MCO 3713	Adv. Writing for Media	3
MCO 2/3xx3	MCO Sophomore/Junior Elective	3
LLT 3/4xx3	LLT Junior/Senior Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 4001	Pathways Capstone Lab	1
MCO/COM 2/3xx3	MCO/COM Sophomore/Junior Elective	3
MCO 2/3xx3	MCO Sophomore/Junior Elective	3
SSC/PSY 3/4xx3	SSC/PSY Junior/Senior Elective	3
MCO 3/4xx3	MCO Junior/Senior Electives	3
GEN xxx3	General Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MCO 4933	Senior Prod. Practicum	3
MCO 3/4xx3	Media Studies Junior/Senior Elective	3
MCO 3/4xx3	MCO Junior/Senior Electives	3
GEN xxx3	General Elective	3
	TOTAL	12

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.

CERTIFICATE IN TELEVISION AND VIDEO PRODUCTION
TOTAL CREDIT HOURS: 15

Course Number	Subject	Cr. Hrs.
MCO 2003	Intro. to Video Production	3
MCO 2543	Writing for Electronic and Print Media	3
MCO 3203	Camera for Broadcast	3

MCO 3303	Video Editing	3
MCO xxx3	MCO Elective	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, email humchair@ltu.edu, or visit room S225 in the Science Building.

BACHELOR OF SCIENCE IN NURSING
TOTAL 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
CHM 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.
LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of the American Experience	3
	TOTAL	6

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
BIO 3203	Anatomy and Physiology A	3
SSC 2423	Development of the American Experience	3
CHM 2103	General Organic and Biochemistry	3
NUR 2102	Holistic Nursing: Complementary Therapies	2
PSY 2623	Social Psychology for Nursing	3
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
BIO 3303	Anatomy and Physiology B	3

MCS 2124	Statistics	4
COM 2103	Technical and Prof. Communication	3
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 I	4
NUR 3214	Mental Health and Illness Across the Lifespan	4
NUR 3202	Informatics for Professional Nurses	2
LLT/PSY/SSC3/4xxx3	Junior/Senior Elective	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 Adult II	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 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
PHY 1213	Astronomy	3
PHY 1221	Astronomy Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 1424	Calculus 2	4
MCS 1142	Intro. to C	2
SSC 2413	Foundations of American Experience	3
LLT 1213	World Masterpieces 1	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
MCS 2414	Calculus 3	4
COM 2103	Technical and Prof. Communication	3
SSC 2423	Development of American Experience	3
	TOTAL	14

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3
LLT 1223	World Masterpieces 2	3
PSY/SSC xxx3	PSY/SSC Elective	3
	TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
PHY 3414*	Analytical Mechanics*	4
PHY 3574 **–or-**	Electricity and Magnetism **–or-**	

Course Number	Subject		Cr. Hrs.
EEE 3414	Electromagnetic Fields		4
MCS 3403	Probability and Statistics		3
MCS 3413 –or–	Advanced Engineering Mathematics –or–		
MCS 3723	Advanced Calculus		3
SPC xxx3	Special Elective		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 4724*	Quantum Mechanics*		4
EEE 2114	Circuits		4
EEE 2111	Circuits Lab		1
PSC 3002	Leadership in Scientific Research		2
SPC xxx3	Special Elective		3
LLT 3/4xx3	LLT Junior/Senior Elective		3
		TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 4763*	Thermal Physics*		3
PHY 4912	Senior Project 1**		2
SPC xxx6	Special Electives		6
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
		TOTAL	14

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
GEN xxx6	General Electives		6
		TOTAL	15

Special Electives can be any of the following:
PHYxxxx, CHMxxxx, PSCxxxx, MCSxxxx, E**xxxx

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

**Students must complete a minimum of 4 credits of senior project. They may elect to increase the number of credits to an overall maximum of 6 credits (at the discretion of the senior project advisor). The extra credits may be allowed to count towards general or tech elective credits. In addition, students may opt to alter the distribution of the credit hours (3 credits in the fall and 1 credit in the spring, for example) to help achieve full time student status.

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.

Lawrence Technological University

Concentration in Computer Science
TOTAL CREDIT HOURS: 126

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
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 2413	University Physics 1		3
PHY 2421	University Physics 1 Lab		1
PHY 1213	Astronomy		3
PHY 1221	Astronomy Lab		1
MCS 1424	Calculus 2		4
MCS 2514	Computer Science 2		4
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 2423	University Physics 2		3
PHY 2431	University Physics 2 Lab		1
MCS 2414	Calculus 3		4
MCS 2523	Discrete Mathematics		3
SSC 2413	Foundations of American Experience		3
		TOTAL	14

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 3653	Contemporary Physics		3
PHY 3661	Contemporary Physics Lab		1
MCS 2423	Differential Equations		3
MCS 2534	Data Structures		4
SSC 2423	Development of American Experience		3
LLT 1213	World Masterpieces 1		3
		TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 3414*	Analytical Mechanics*		4
MCS 3863	Linear Algebra		3

Lawrence Technological University

Course Number	Subject		Cr. Hrs.
MCS 3723	Advanced Calculus		3
COM 2103	Technical and Prof. Communication		3
LLT 1223	World Masterpieces 2		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 3574 **–or-**	Electricity and Magnetism **–or-**		
EEE 3414	Electromagnetic Fields		4
PHY 4763*	Thermal Physics*		3
MCS 3403	Probability and Statistics		3
PSC 3002	Leadership in Scientific Research		2
PSY/SSC xxx3	PSY/SSC Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PHY 4724*	Quantum Mechanics*		4
PHY 4913	Senior Project 1		3
MCS 4813	Numerical Analysis 1		3
MCS 3/4xx3	MCS Junior/Senior Elective		3
PSY/SSC 3/4xx3	PSY/SSC Junior/Senior Elective		3
		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 4923	Senior Project 2		3
MCS 3523	Math Modeling		3
LLT 3/4xx3	LLT Junior/Senior Elective		3
		TOTAL	16

Special Electives can be any of the following:
PHYxxxx, CHMxxxx, PSCxxxx, MCSxxxx, BMExxxx, EAExxxx, ECExxxx, EEExxxx, EGExxxx, EMExxxx

BACHELOR OF SCIENCE IN PSYCHOLOGY
Clinical Psychology Concentration
TOTAL 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 2/3xx3	Psychology Elective		3
GEN xxx3	General Elective		3
		TOTAL	15

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT 3/4xx3	LLT Junior/Senior Elective		3
PSY 3623	Social Psychology		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
GEN xxx6	General Electives		6
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 3213 **–or–**	Cognitive Psychology **–or–**		
PSY 4213	Behavioral Neuroscience		3
PSY 3633	Abnormal Psychology		3
PSY 4113	Psychology Internship		3
PSY 3/4xx6	PSY Junior/Senior Electives		6
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.

Course Number	Subject		Cr. Hrs.
PSY 4633	Clinical Psychology		3
PSY 4912	Senior Research Project 1		2
PSY 3/4xx6	PSY Junior/Senior Elective		6
COM 4001	Pathways Capstone Lab		1
GEN xxx3	General 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 3/4xx3	PSY Junior/Senior Elective		3
GEN xxx6	General Electives		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
GEN xxx3	General Elective		3
PSY 2/3xx3	PSY Elective		3
		TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 3/4xx3	PSY Junior/Senior Elective		3
PSY 3413	Sensation and Perception		3
PSY 3623	Social Psychology		3
PSY 2393	Sport Psychology		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 3213 –**or**–	Cognitive Psychology –**or**–		
PSY 4213	Behavioral Neuroscience		3
LLT 3/4xx3	LLT Junior/Senior Elective		3
PSY 4113	Psychology Internship		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
GEN xxx3	General Elective		3
		TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 4313	Drugs and Behavior		3
PSY 4912	Senior Research Project 1		2
PSY 4513	Animal Behavior		3
COM 4001	Pathways Capstone Lab		1
PSY 3/4xx3	PSY Junior/Senior Elective		3
GEN xxx3	General 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 3/4xx6	Psychology Electives		6
GEN xxx6	General Electives		6
		TOTAL	17

Industrial/Organizational Psychology Concentration
TOTAL CREDIT HOURS: 124

Freshman Year

Lawrence Technological University

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 2/3XX3	PSY Elective		3
		TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 3313	Industrial Psychology		3
PSY 3623	Social Psychology		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
HRM 3023	Human Resource Management		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.

Course Number	Subject		Cr. Hrs.
PSY 3213 –**or**–	Cognitive Psychology –**or**–		
PSY 4213	Behavioral Neuroscience		3
PSY 3323	Organizational Psychology		3
LLT 3/4xx3	LLT Junior/Senior Elective		3
PSY 4113	Psychology Internship		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 4001	Pathways Capstone Lab		1
PSY 4912	Senior Research Project 1		2
MGT 3303–**or**–	International Trade –**or**–		
MGT 3103	Project Management		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
GEN xxx6	General Electives		6
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 4922	Senior Research Project 2		2
SSC 3313 –**or**–	History and Philosophy of Science –**or**–		
SSC 3613	Philosophy of Mind		3
PSY 3/4xx6	PSY Junior/Senior Elective		6
GEN xxx6	General Electives		6
		TOTAL	17

Pre-Med/Biobehavioral Psychology Concentration
TOTAL 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
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
COM 2103	Technical and Prof. Communication		3
PSY 1003	World of the Mind		3
PSY 2343	Human Sexuality		3
PSY 3/4xx3	PSY Junior/Senior Elective		3

		TOTAL	16

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
PSY 2613	Developmental Psychology		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
PSY 3223	Experimental Psychology Lab		3
PSY 4313	Drugs and Behavior		3
SSC 2413	Foundations of American Experience		3
LLT 1223	World Masterpieces 2		3
CHM 1223	University Chemistry 2		3
CHM 1231	University Chemistry 2 Lab		1
		TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of American Experience		3
PSY 3623	Social Psychology		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
CHM 2313	Organic Chemistry 1		3
CHM 2311	Organic Chemistry 1 Lab		1
COM 2113	Speech		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
CHM 2323	Organic Chemistry 2		3
CHM 2321	Organic Chemistry Lab		1
BIO 3323	Molecular Genetics		3
PSY 3213 –**or**–	Cognitive Psychology –**or**–		
PSY 4213	Behavioral Neuroscience		3
PSY 4113	Psychology Internship		3
PSY 3/4xx3	PSY Junior/Senior Elective		3
		TOTAL	16

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
LLT 3/4xx3	LLT Junior/Senior Elective		3
PSY 4912	Senior Research Project 1		2
PSY 3/4xx3	PSY Junior/Senior Elective		3
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 3/4xx3	PSY Junior/Senior Elective		3
		TOTAL	12

CERTIFICATE IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY
TOTAL CREDIT HOURS: 15

Two of the following three courses:

Course Number	Subject		Cr. Hrs.
HRM 3023	Human Resource Management		3
HRM 4013	Labor Relations		3
HRM 3/4xx3	HR Junior/Senior Elective		3
and the following:			
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, email humchair@ltu.edu or psych@ltu.edu, or visit room S225 in the Science Building.

BACHELOR OF SCIENCE IN TECHNOLOGICAL HUMANITIES
TOTAL CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1001	Pathways to Research Careers		1
CHM 1103	College Composition		3
MCS 1074 –**or**–	Precalculus –**or**–		
MCS 1224	Survey of Calculus		4
MCS 1243	Foundations of Computer Science		3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Science Elective 1		3
BIO/PHY/CHM/ GLG/FSC/PSCxxx1	Natural Science Lab Elective		1
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3

LLT 1213	World Masterpieces 1	3
LLT 2XX3	Humanity and Technology	3
PSY 1213	Intro to Psychology	3
SSC 2413	Foundations of the American Experience	3
	TOTAL	15

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Professional Comm	3
LLT 1223	World Masterpieces 2	3
MCS 1142	Intro to C	2
MCS 2124	Statistics	4
SSC 2423	Development of the American Experience	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2443	Intro to Rhetoric	3
MCS 1514	Computer Science 1	4
PSY 2113	Research Methods	3
SSC 2303	Principles of Economics 1	3
BIO/PHY/CHM/ GLG/FSC/PSCxxx3	Natural Science Elective 2	3
	TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3563 –**or**–	Collaborative Communication –**or**–	
COM 3553	Interpersonal Communication	3
LLT 3443	American Lit., Contact to Civil War	3
MCS 1111	Coding Club	1
SSC 3153 –**or**–	U.S. History Survey 1 –**or**–	
SSC 3133	European History Survey 1	3
SSC 3723	Ethics	3
COM/CRW/LLT/ MCS/SSC3/4xx3	Technology Application Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3453	American Lit., Reconstruction to Present	3
LLT 4523	Creative Writing	3
LLT 4533	Literary Criticism and Cultural Studies	3
MCS 1111	Coding Club	1
SSC 3163 –**or**–	U.S. History Survey 2 –**or**–	
SSC 3143	European History Survey 2	3
COM/CRW/LLT/ MCS/SSC3/4xx3	Technology Application Elective	3

		TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 3543 –**or**–	Technical Editing –**or**–		
COM 4153	Proposal Writing		3
LLT 4913	Mythology		3
SSC 4113	Internship / Practicum		3
SSC 4733	History of Technology		3
COM/CRW/LLT/			
MCS/SSC3/4xx3	Technology Application Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 4001	Pathways Capstone Lab		1
SSC 4903	Senior Thesis		3
COM/CRW/LLT/			
MCS/SSC3/4xx3	Thesis Elective		3
COM/CRW/LLT/			
MCS/SSC3/4xx3	Thesis Elective		3
COM/CRW/LLT/			
MCS/SSC3/4xx3	Technology Application Elective		3
		TOTAL	13

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.
TOTAL CREDIT HOURS: 78/79

Course Number	Subject		Cr. Hrs.
BIO1213/BIO 1221	One year of general biology with Labs		8
BIO1223/BIO1231			
		TOTAL	8

One upper-level course from the following (recommended):

Course Number	Subject		Cr. Hrs.
BIO 2323	Molecular Genetics		3
BIO 3203/BIO 3303/	Anatomy and Physiology A and B and Lab		
BIO 3201			7
BIO 4813/BIO 4821	Cell Biology and Lab		4
		TOTAL	14

Course Number	Subject		Cr. Hrs.
CHM 1213/CHM 1221/	One year of general chemistry with Labs		9
CHM 2313/CHM 2311	One year of organic chemistry and Lab		8
CHM 3404	One biochemistry course (recommended)		3

		TOTAL	20

Course Number	*Subject*		*Cr. Hrs.*
PSY 1213	General Psychology		3
PSY 4213	Behavioral Neuroscience		3
PSY3633	Abnormal Psychology		3
		TOTAL	9

Course Number	*Subject*		*Cr. Hrs.*
PHY 2413/PHY 2421 –**or**–	Univ Physics 1/Lab –**or**– College Physics 1/Lab		
PHY 2213/PHY 2221			4
PHY 2423/PHY 2431 –**or**–	Univ Physics 2/Lab –**or**– College Physics 2/Lab		
PHY 2223/PHY 2231			4
		TOTAL	8

Course Number	*Subject*		*Cr. Hrs.*
MCS 1414/MCS1424 –**or**–	Calculus 1 and Calculus 2 –**or**–		
MCS 1074/MCS1224	Precalculus and Survey of Calculus		8
MCS 2124 –**or**–	Statistics –**or**–		
MCS 3403	Probability and Statistics		3-4
		TOTAL	19-20

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

COM 2113	Speech	3
COM 2443	Introduction to Rhetoric and Logic	3

Lawrence Technological University

COM 3463	Collaborative Communication	3
COM 3553	Interpersonal and Nonverbal Comm.	3

History, Philosophy, and Political Science

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

MGT 2113	Introduction to Business Law		3
SSC 4143	Constitutional Law: Individual Rights		3
		TOTAL	45

For more information, contact humchair@ltu.edu, or call 248.204.3520.

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)		12
Selected from biology courses numbered 2000 or higher		
	TOTAL	20

For more information, contact nschair@ltu.edu, or call 248.204.3600.

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 credit hours)

Course Number	Subject	Cr. Hrs.

Lawrence Technological University

CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1231	Chemistry 2 Lab	1

Chemistry Electives (minimum of 11 credit hours)
selected from Chemistry courses numbered
2000 or higher (except CHM 3144)   11

                                        TOTAL   19

For more information, contact nschair@ltu.edu, or call 248.204.3600.

MINOR IN COMPUTER SCIENCE (25 – 28 credits)
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	Intro. Database Systems	4
Plus two courses of the following:		
MCS 2403	Inroduction to Data Science	3
MCS 2523	Discrete Math	3
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 (MCS 3/4xx3) approved by a computer science advisor
Option 2
One upper division class (MCS 3/4xx3) 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 and MCS 4843 (Senior Project 2) **-or-** MCS 4833 plus one
additional upper division class (MCS 3/4xx3) approved by a computer science advisor.

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, or call 248.204.3560.

MINOR IN ECONOMICS

Course Number	Subject	Cr. Hrs.
MCS 1224 –**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

SSC 3523 (Money and Banking) is an economics course.

For more information, contact humchair@ltu.edu, or call 248.204.3520.

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, or call 248.204.3520.

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	Chemistry 2 Lab	1

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**–

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

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, or call 248.204.3600.

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, or call 248.204.3520.

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 3123	Applied Statistics	3
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 2403	Introduction to Data Science	3
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, or call 248.204.3560.

MINOR IN MEDIA COMMUNICATION

Course Number	Subject	Cr. Hrs.
MCO 2003	Intro. to Video Production	3
MCO 2543	Writing for Electronic and Print Media	3
MCO 3203	Camera for Broadcast News	3
MCO 3303	Video Editing	3
MCO 3713	Advanced Writing for Media	3
MCO 3/4xx3	MCO Junior/Senior Elective	3
	TOTAL	18

For more information, contact humchair@ltu.edu, or call 248.204.3520.

MINOR IN PHILOSOPHY

Five upper-division courses in philosophy (not including prerequisites)   15
Consult HSSC advisor.

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, or call 248.204.3520.

Lawrence Technological University

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 1221	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, or call 248.204.3600.

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, or call 248.204.3520.

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**–	Interpersonal and Nonverb. Comm. –**or**–	
COM 3563	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, or call 248.204.3520.

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
Mathematics with Physics

For further information about dual majors or minors, please see the individual major program descriptions or contact the advisor listed for the major program.

College of Business and Information Technology

Dean
Bahman Mirshab
M331, 248.204.3050

Director of Business Programs
Minakhi (Mina) Jena
M331, 248.204.3071

ABOUT THE COLLEGE OF BUSINESS AND INFORMATION TECHNOLOGY

Using a model of theory and practice, the College of Business and Information Technology prepares a diverse body of domestic and international students for successful careers in a variety of organizations through interdisciplinary educational programs that emphasize analytical, technological, ethical, teamwork, global management, and interpersonal skills essential in an interconnected world economy. Faculty engagement in scholarly activity and service to the University, the profession, and the community complements our primary commitment to teaching and service excellence.

The College of Business and Information Technology 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 Business and Information Technology is fully accredited by the AACSB International – the Association to Advance Collegiate Schools of Business. AACSB accreditation represents the highest standard of achievement for business schools worldwide.

Lawrence Technological University

UNDERGRADUATE DEGREE PROGRAMS
Lawrence Technological University's College of Business and Information Technology offers the following undergraduate degree programs:

Bachelor of Science in Business Administration with majors in:
- Accounting
- Finance
- General Business
- Information Technology
- Marketing

Bachelor of Science in Business Data Analytics
Bachelor of Science in Information Technology
Minor in Business Administration
Direct-Entry 4+1 BSBA/MBA Program
Direct-Entry 4+1 BSIT/MSIT Program

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. This 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 inside the classroom through projects and case studies as well as outside the classroom with paid internships, student organizations, and professional development opportunities. Earn early admission to the College of Business and Information Technology's 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
- Receive professional guidance from full-time academic advisors to carefully create program plans to meet individual goals
- Participate in a network of professional organizations and industrial partners, such as the American Marketing Association, Beta Gamma Sigma Honor Society, Collegiate DECA, the

Lawrence Technological University

Economic Club of Detroit, Financial Executives International, Young Leadership Program, and OESA Program, among others

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH A MAJOR IN GENERAL BUSINESS
TOTAL CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 2013	Principles of Marketing		3
COM 1103	College Composition		3
MGT 2203	Principles of Management		3
MCS 1074	Precalculus		4
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
INT 2103	Information Technology Management		3
SSC 2413	Foundations of American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2013	Intro. to Financial Accounting		3
LLT 1213	World Masterpieces 1		3
MKT 2023	Entrepreneurship		3
MCS 2124	Statistics		4
SSC 2303	Principles of Economics		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting		3
LLT 1223	World Masterpieces 2		3
SSC 2403	Principles of Economics 2		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
ACC/FIN/INT/MKT 3/4xxx3	Major Elective		3
		TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2113	Speech	3
MGT 2113	Introduction to Business Law	3
SSC 2423	Development of the American Exp.	3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective	3
GEN xxx3	General Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
HRM 3023	Human Resources Management	3
FIN 3103	Financial Management	3
MGT 3033	International Trade	3
MGT 3103	Project Management	3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective	3
	TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective	3
MGT 3113	Operations Management	3
MGT 4023	Simulation and Mgmt. Science	3
ACC/FIN/INT/MKT /4xxx3	Major Elective	3
GEN xxx3	General Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MGT 3053	Business Internship	3
MGT 4213	Strategic Mgmt. and Business Policy	3
MGT 4113	Applied Decision Analysis	3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective	3
GEN xxx3	General 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.

MAJOR ELECTIVE OPTIONS FOR GENERAL BUSINESS
Students may receive a Major in General Business by completing a combination of the courses listed below within the other majors (15 credit hours in total) to satisfy their major electives.

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

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 and Markets	3
FIN 4023	Risk Management	3

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 and Design	3
INT 4423	Data Science for Business	3

MARKETING

Course Number	Subject	Cr. Hrs.
MKT 3213	Marketing Research	3
MKT 3063	Integrated Marketing Comm.	3
MKT 4013	Consumer Behavior	3
MKT 4023	Digital Marketing	3
MKT 4043	Professional Selling	3
MKT 4053	Consumer Analytics	3

Consult with your advisor to determine the best way to coordinate these electives with the requirements of your core curriculum.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH A MAJOR IN ACCOUNTING
TOTAL CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
ACC 2013	Intro. to Financial Acct	3
COM 1103	College Composition	3
MCS 1074	Precalculus	4

| MGT 2203 | Principles of Mgmt. | | 3 |
| | | TOTAL | 13 |

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Acct.		3
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
MKT 2013	Marketing		3
SSC 2413	Foundations of American Exp.		3
		TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 3023	Intermediate Accounting 1: Assets		3
MKT 2123	Entrepreneurship		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 3033	Intermediate Accounting 2: Equities		3
FIN 3103	Financial Management		3
COM 2113	Speech		3
LLT 1213	World Masterpieces 1		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 3053	Individual Income Tax		3
LLT 1223	World Masterpieces 2		3
MGT 2113	Intro. to Business Law		3
SSC 2303	Principles of Economics		3
INT 2103	Info. Tech. Management		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 4013	Accounting Information Systems		3
HRM 3023	Human Resources Management		3
MGT 3053	Business Internship		3
SSC 2403	Principles of Economics 2		3

Course Number	Subject	Cr. Hrs.
GEN xxx3	General Elective	3
	TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective	3
MGT 3033	International Trade	3
MGT 3113	Operations Management	3
MGT 4023	Simulation and Mgmt. Science	3
GEN xxx3	General Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ACC 4033	Principles of Auditing	3
GEN xxx3	General Elective	3
MGT 3103	Project Management	3
MGT 4213	Strategic Mgmt. and Business Policy	3
MGT 4113	Applied Decision Analysis	3
	TOTAL	15

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH A MAJOR IN FINANCE
TOTAL CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
ACC 2013	Intro. to Financial Acct	3
COM 1103	College Composition	3
MCS 1074	Precalculus	4
MGT 2203	Principles of Management	3
	TOTAL	13

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Prof. Communication	3
FIN 3103	Financial Management	3
MCS 1224	Survey of Calculus	4
MKT 2013	Marketing	3
SSC 2413	Foundations of American Exp.	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MKT 2123	Entrepreneurship	3
FIN 4023	Risk Management	3
MCS 2124	Statistics	4

SSC 2423	Development of the American Exp.	3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting	3
INT 2103	Info. Tech. Management	3
LLT 1213	World Masterpieces 1	3
COM 2113	Speech	3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2	3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab	1
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
FIN 3303	International Financial Management	3
FIN 4013	Financial Institutions and Markets	3
LLT 1223	World Masterpieces 2	3
SSC 2303	Principles of Economics	3
GEN xxx3	General Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
FIN 3113	Investment Management	3
MGT 2113	Intro. to Business Law	3
MGT 3053	Business Internship	3
SSC 2403	Principles of Economics 2	3
GEN xxx3	General Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
HRM 3023	Human Resources Management	3
LLT/SSC/PSY 3/4xx3	Humanities Elective	3
MGT 3033	International Trade	3
MGT 3113	Operations Management	3
MGT 4023	Simulation and Mgmt. Science	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
GEN xxx3	General Elective	3
FIN 3203	Corporate Finance	3
MGT 3103	Project Management	3

Course Number	Subject	Cr. Hrs.
MGT 4213	Strategic Mgmt. and Business Policy	3
MGT 4113	Applied Decision Analysis	3
	TOTAL	15

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH A MAJOR IN INFORMATION TECHNOLOGY
TOTAL CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3
INT 2103	Info. Tech. Management	3
MCS 1074	Precalculus	4
MGT 2203	Principles of Management	3
	TOTAL	13

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Prof. Communication	3
MCS 1224	Survey of Calculus	4
MKT 2013	Principles of Marketing	3
SSC 2413	Foundations of American Exp.	3
GEN xxx3	General Elective	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
ACC 2013	Intro. to Financial Accounting	3
INT 3203	Computer Networks I	3
MCS 2124	Statistics	4
SSC 2423	Development of the American Exp.	3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting	3
MKT 2123	Entrepreneurship	3
INT 2143	Database Systems I	3
LLT 1213	World Masterpieces 1	3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2	3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab	1
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
FIN 3103	Financial Management		3
INT 3603	Human Computer Interaction		3
LLT 1223	World Masterpieces 2		3
MGT 2113	Intro. to Business Law		3
SSC 2303	Principles of Economics		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
HRM 3023	Human Resources Management		3
INT 4423	Data Science for Business		3
MGT 3053	Business Internship		3
SSC 2403	Principles of Economics 2		3
GEN xxx3	General Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
INT 4203	Systems Analysis and Design		3
MGT 3033	International Trade		3
MGT 3113	Operations Management		3
MGT 4023	Simulation and Mgmt. Science		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT/SSC/PSY 3/4xx3	Humanities Elective		3
MGT 3103	Project Management		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
GEN xxx3	General Elective		3
		TOTAL	15

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH A MAJOR IN MARKETING
TOTAL CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3
MCS 1074	Precalculus	4
MGT 2203	Principles of Management	3
MKT 2013	Principles of Marketing	3

		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
MGT 2113	Intro. to Business Law		3
SSC 2413	Foundations of American Exp.		3
GEN xxx3	General Elective		3
		TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 2123	Entrepreneurship		3
ACC 2013	Intro. to Financial Accounting		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting		3
INT 2103	Info. Tech. Management		3
LLT 1213	World Masterpieces 1		3
MKT 3/4xxx3	Marketing Elective		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
FIN 3103	Financial Management		3
LLT 1223	World Masterpieces 2		3
MKT 3/4xxx3	Marketing Elective		3
SSC 2303	Principles of Economics		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
HRM 3023	Human Resources Management		3
MGT 3103	Project Management		3
MGT 3053	Business Internship		3
MKT 3/4xxx3	Marketing Elective		3

Course Number	Subject		Cr. Hrs.
SSC 2403	Principles of Economics 2		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
MGT 3033	International Trade		3
MGT 3113	Operations Management		3
MGT 4023	Simulation and Mgmt. Science		3
MKT 3/4xxx3	Marketing Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
LLT/SSC/PSY 3/4xx3	Humanities Elective		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
MKT 3/4xxx3	Marketing Elective		3
GEN xxx3	General Elective		3
		TOTAL	15

MAJOR ELECTIVE OPTIONS FOR MARKETING
Students may receive a Major in Marketing by completing a combination of the courses listed below within the other majors (15 credit hours in total) to satisfy their major electives.

Course Number	Subject	Cr. Hrs.
MKT 3213	Marketing Research	3
MKT 3063	Integrated Marketing Comm.	3
MKT 4013	Consumer Behavior	3
MKT 4023	Digital Marketing	3
MKT 4043	Professional Selling	3
MKT 4053	Consumer Analytics	3

BACHELOR OF SCIENCE IN BUSINESS DATA ANALYTICS
TOTAL SEMESTER CREDIT HOURS: 122

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
INT 2103	Info. Tech. Management		3
COM 1103	College Composition		3
MCS 1074	Precalculus		4
MGT 2203	Principles of Mgmt.		3
		TOTAL	13

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.

Course Number	Subject		Cr. Hrs.
TBD	Intro. to Data Analytics		3
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
MKT 2013	Principles of Marketing		3
SSC 2413	Foundations of American Exp.		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
INT 2114	Fundamentals of Programming Python		4
ACC 2013	Intro. to Financial Accounting		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
INT 2143	Database Systems 1		3
MKT 4053	Consumer Analytics		3
LLT 1213	World Masterpieces 1		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
TBD	Introduction to Machine Learning		3
LLT 1223	World Masterpieces 2		3
MGT 2113	Intro. to Business Law		3
INT 3203	Computer Networks I		3
FIN 3103	Financial Management		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
INT 4023	Cybersecurity		3
INT 4423	Data Science for Business		3
TBD	Data Mining Algorithm		3
TBD	Visual Analytics		3
MKT 3213	Marketing Research		3
		TOTAL	15

Lawrence Technological University

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
INT 4413	Business Intelligence & Analytics		3
TBD	Artificial Intelligence in Business		3
MGT 4113	Applied Decision Analysis		3
MGT 3113	Operations Management		3
INT 3803	Database Systems II		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 4023	Digital Marketing		3
TBD	Intro. to Social Media Analytics		3
MGT 3103	Project Management		3
MGT 4023	Simulation and Management Science		3
TBD	3 Credit Elective		3
		TOTAL	15

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 CREDIT HOURS: 120

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3

Course Number	Subject		Cr. Hrs.
MCS 1074	Precalculus		4
INT 2103	Info. Tech. Management		3
MGT 2203	Principles of Management		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
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 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
GEN xxx3	General 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 Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
GEN xxx3	General Elective		3
		TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of American Exp.		3
INT 3603	Human Computer Interaction		3
INT 3803	Database Systems II		3
GEN xxx3	General Elective		3
INT 3/4xx3	Major 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
GEN xxx3	General Elective		3
INT 3/4xxx3	Major 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 3/4xx3	Humanities Elective		3
INT 3/4xxx3	Major Electives (2)		6
		TOTAL	15

SECOND SEMESTER

Course Number	*Subject*		*Cr. Hrs.*
INT 4303	IT Capstone		3
MKT 2123	Entrepreneurship		3
INT 3/4xx3	Major 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.

DUAL MAJOR OPTIONS
Students in the Bachelor of Science in Business Administration (BSBA) degree program can choose to complete a dual major. Students pursuing a second major must complete 15 credit hours unique to the additional major. Students must declare the dual major and it must be approved by an academic advisor. Dual major options are as follows:
- Accounting/Finance
- Accounting/Information Technology
- Accounting/Marketing
- Accounting/General Business
- Finance/General Business
- Finance/Information Technology
- Finance/Marketing
- General Business/Information Technology
- General Business/Marketing
- Information Technology/Marketing

DIRECT-ENTRY 4+1 BSBA/MBA PROGRAM
AND
DIRECT-ENTRY 4+1 BSIT/MSIT PROGRAM

The 4+1 accelerated BSBA (Bachelor of Science in Business Administration)/MBA (Master of Business Administration) and BSIT (Bachelor of Science in Information Technology)/MSIT (Master of Science in Information Technology) programs provides a head start for the ambitious and motivated student to earn a BSBA and MBA or BSIT and MSIT in five years. Students in the 4+1

program start graduate course work prior to the completion of their undergraduate degree during their junior and senior year and are allowed to count up to 9 credit hours of graduate coursework towards both their undergraduate and graduate degrees. After graduating with their Bachelor's degree, 4+1 students can complete their Master degree in three additional semesters or one academic year (summer, fall, spring). Freshman LTU Academic Scholarships will be continued through the fifth year. This allows students to earn a Master's degree while saving cost and time. Students get the added benefit of networking opportunities when they take Master level courses with working professionals.

The total number of credits for BSBA/MBA combined program is 112 (undergraduate) + 9 (graduate double counted) + 24 (graduate) = 145.

The total number of credits for BSIT/MSIT combined program is 111 (undergraduate) + 9 (graduate double counted) + 21 (graduate) = 141.

Admission requirements of the 4+1 BSBA/MBA and BSIT/MSIT are the same as the requirements for the first-year freshmen for Bachelor's degree, except applicants should have a high school GPA of 3.5 or higher. Once admitted students must maintain cumulative GPA of 3.0 or better with no grade below a "C" in the undergraduate core classes.

4+1 BSBA/MBA and 4+1 BSIT/MSIT Program Policy and Procedures:

- This program is mainly for freshmen or sophomore transfer students seeking admission into LTU's BSBA or BSIT Program
- Current undergraduate Business or IT students with 60 credit hours or fewer may apply for this program. At the time of their application, their current LTU GPA must be 3.3 or higher
- Up to nine graduate credits may be double counted toward both BSBA and BSIT degree programs
- Each of the graduate classes must have a "C" or better grade to be transferred to the undergraduate transcript
- Freshman LTU Scholarships will be continued through the fifth year
- Students are required to pay graduate tuition rates for all graduate-level courses taken
- In the junior year, after earning at least 60 credit hours, 4+1 BSBA/MBA and 4+1 BSIT/MSIT students must meet with the program director or with an Academic Adviser to develop an academic program plan, and file a petition to officially begin the graduate portion of the program. The most important factors for the approval are the cumulative GPA, which must be 3.3 or better. If the petition is approved, they remain in the 4+1 program. If the petition is not approved, they may exit the 4+1 program and pursue only a Bachelor's degree
- There is no obligation to enter the fifth year MBA or MSIT degree program, if the student chooses to do so
- Students may choose to delay completion of their Master's degree beyond the fifth year. However, scholarship funds will end after five years

Lawrence Technological University

4+1 BSBA/MBA WITH A MAJOR IN GENERAL BUSINESS
TOTAL CREDIT HOURS: 145

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 2013	Marketing		3
COM 1103	College Composition		3
MGT 2203	Principles of Management		3
MCS 1074	Precalculus		4
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MGT 2113	Intro. to Business Law		3
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
INT 2103	Information Technology Management		3
SSC 2413	Foundations of American Exp.		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2013	Intro. to Financial Accounting		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
LLT 1213	World Masterpieces 1		3
MCS 2124	Statistics		4
SSC 2303	Principles of Economics		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting		3
LLT 1223	World Masterpieces 2		3
SSC 2403	Principles of Economics 2		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
ACC/FIN/INT/MKT 3/4xxx3	Major Elective		3
		TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 2123	Entrepreneurship		3

Course Number	Subject		Cr. Hrs.
FIN 3103	Financial Management		3
SSC 2423	Development of the American Exp.		3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective		3
HRM 3023	Human Resource Management		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 6063	Operations Management		3
MGT 3053	Business Internship		3
MGT 3033	International Trade		3
GEN xxx3	General Elective		3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective		3
MBA 6043	Global Leadership		3
MGT 4023	Simulation and Mgmt. Science		3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
ACC/FIN/INT/MKT 3/4xxx3	Major Elective		3
MBA 7063	Project Management		3
		TOTAL	15

Graduate Year
FIRST SEMESTER (SUMMER)

Course Number	Subject		Cr. Hrs.
INT 6043	Management Information Systems		3
xxx3	Graduate Elective		3
		TOTAL	6

SECOND SEMESTER (FALL)

Course Number	Subject		Cr. Hrs.
MBA 6003	Financial Management		3
ACC 6003	Managerial Accounting		3
ECN 6023	Global Business Economics		3
		TOTAL	9

THIRD SEMESTER (SPRING)

Course Number	Subject	Cr. Hrs.
MBA 6033	Corporate Finance	3
MBA 6073	Global Strategic Management	3
xxx3	Graduate Elective	3
	TOTAL	9

*Students can also take certain four-credit science courses that have a laboratory component to satisfy Natural Science 2 and Natural Science Lab requirements.

MAJOR ELECTIVE OPTIONS FOR GENERAL BUSINESS
Students may receive a Major in General Business by completing a combination of the courses listed below within the other majors (15 credit hours in total) to satisfy their major electives.

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

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 and Markets	3
FIN 4023	Risk Management	3

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 and Design	3
INT 4423	Data Science for Business	3

MARKETING

Course Number	Subject	Cr. Hrs.
MKT 3213	Marketing Research	3
MKT 3063	Integrated Marketing Comm.	3
MKT 4013	Consumer Behavior	3
MKT 4023	Digital Marketing	3
MKT 4033	Entrepreneurship	3

Lawrence Technological University

Consult with your advisor to determine the best way to coordinate these electives with the requirements of your core curriculum.

4+1 BSBA/MBA WITH A MAJOR IN ACCOUNTING
TOTAL CREDIT HOURS: 145

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2013	Intro. to Financial Acct		3
COM 1103	College Composition		3
MCS 1074	Precalculus		4
MGT 2203	Principles of Mgmt.		3
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Acct.		3
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
MKT 2013	Marketing		3
SSC 2413	Foundations of American Exp.		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 3023	Intermediate Accounting 1: Assets		3
MKT 2123	Entrepreneurship		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 3033	Intermediate Accounting 2: Equities		3
FIN 3103	Financial Management		3
INT 2103	Info. Tech. Management		3
LLT 1213	World Masterpieces 1		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 3053	Individual Income Tax		3

Course Number	Subject		Cr. Hrs.
LLT 1223	World Masterpieces 2		3
MGT 2113	Intro. to Business Law		3
SSC 2303	Principles of Economics		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 6063	Operations Management		3
ACC 4013	Accounting Information Systems		3
HRM 3023	Human Resources Management		3
MGT 3053	Business Internship		3
SSC 2403	Principles of Economics 2		3
		TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 6043	Global Leadership		3
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective		3
MGT 3033	International Trade		3
MGT 4023	Simulation and Mgmt. Science		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 4033	Principles of Auditing		3
COM 2113	Speech		3
MBA 7063	Project Management		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
		TOTAL	15

Graduate Year

FIRST SEMESTER (SUMMER)

Course Number	Subject		Cr. Hrs.
INT 6043	Management Information Systems		3
xxx3	Graduate Elective		3
		TOTAL	6

SECOND SEMESTER (FALL)

Course Number	Subject		Cr. Hrs.
MBA 6003	Financial Management		3
MBA 6053	Strategic Marketing Management		3
ECN 6023	Global Business Economics		3
		TOTAL	9

THIRD SEMESTER (SPRING)

Course Number	Subject		Cr. Hrs.
MBA 6033	Corporate Finance		3

MBA 6073	Global Strategic Management		3
xxx3	Graduate Elective		3
		TOTAL	9

4+1 BSBA/MBA WITH A MAJOR IN FINANCE
TOTAL CREDIT HOURS: 145

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2013	Intro. to Financial Acct		3
COM 1103	College Composition		3
MCS 1074	Precalculus		4
MGT 2203	Principles of Management		3
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
FIN 3103	Financial Management		3
MCS 1224	Survey of Calculus		4
MKT 2013	Marketing		3
SSC 2413	Foundations of American Exp.		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 2123	Entrepreneurship		3
FIN 4023	Risk Management		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting		3
FIN 3303	International Financial Management		3
LLT 1213	World Masterpieces 1		3
GEN xxx3	General Elective		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Junior Year
FIRST SEMESTER

Lawrence Technological University

Course Number	Subject		Cr. Hrs.
INT 2103	Information Technology Management		3
INT 4013	Financial Institutions and Markets		3
LLT 1223	World Masterpieces 2		3
SSC 2303	Principles of Economics		3
GEN xxx3	General Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 6033	Corporate Finance		3
MGT 2113	Intro. to Business Law		3
MGT 3053	Business Internship		3
SSC 2403	Principles of Economics 2		3
GEN xxx3	General Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 6063	Operations Management		3
HRM 3023	Human Resources Management		3
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective		3
MGT 3033	International Trade		3
MGT 4023	Simulation and Mgmt. Science		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
FIN 3113	Investment Management		3
MBA 7063	Project Management		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
		TOTAL	15

Graduate Year
FIRST SEMESTER (SUMMER)

Course Number	Subject		Cr. Hrs.
INT 6043	Management Information Systems		3
MBA 6043	Global Leadership		3
		TOTAL	6

SECOND SEMESTER (FALL)

Course Number	Subject		Cr. Hrs.
ACC 6003	Managerial Accounting		3
MBA 6053	Strategic Marketing Management		3
ECN 6023	Global Business Economics		3
		TOTAL	9

THIRD SEMESTER (SPRING)

Course Number	Subject		Cr. Hrs.

MBA 6073	Global Strategic Management		3
xxx3	Graduate Elective		3
xxx3	Graduate Elective		3
		TOTAL	9

4+1 BSBA/MBA WITH A MAJOR IN INFORMATION TECHNOLOGY
TOTAL CREDIT HOURS: 145

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1103	College Composition		3
INT 2103	Info. Tech. Management		3
MCS 1074	Precalculus		4
MGT 2203	Principles of Management		3
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
MKT 2013	Marketing		3
SSC 2413	Foundations of American Exp.		3
GEN xxx3	General Elective		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2013	Intro. to Financial Accounting		3
INT 3203	Computer Networks I		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting		3
MKT 2123	Entrepreneurship		3
INT 2143	Database Systems I		3
LLT 1213	World Masterpieces 1		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
FIN 3103	Financial Management		3
INT 3603	Human Computer Interactions		3
LLT 1223	World Masterpieces 2		3
MGT 2113	Intro. to Business Law		3
SSC 2303	Principles of Economics		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
HRM 3023	Human Resources Management		3
INT 4423	Data Science for Business		3
MGT 3053	Business Internship		3
SSC 2403	Principles of Economics 2		3
MBA 6063	Operations & Supply Chain Management		3
		TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
INT 4203	Systems Analysis and Design		3
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective		3
MGT 3033	International Trade		3
MGT 4023	Simulation and Mgmt. Science		3
MBA 6043	Global Leadership		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
MBA 7063	Project Management		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
GEN xxx3	General Elective		3
		TOTAL	15

Graduate Year

FIRST SEMESTER (SUMMER)

Course Number	Subject		Cr. Hrs.
ECN 6023	Global Business Economics		3
xxx3	Elective		3
		TOTAL	6

SECOND SEMESTER (FALL)

Course Number	Subject		Cr. Hrs.
MBA 6003	Financial Management		3
ACC 6003	Managerial Accounting		3
MBA 6053	Strategic Marketing Management		3
		TOTAL	9

THIRD SEMESTER (SPRING)

Course Number	Subject		Cr. Hrs.
MBA 6033	Corporate Finance		3
MBA 6073	Global Strategic Management		3
xxx3	Graduate Elective		3
		TOTAL	9

4+1 BSBA/MBA WITH A MAJOR IN MARKETING
TOTAL CREDIT HOURS: 145

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1103	College Composition		3
MCS 1074	Precalculus		4
MGT 2203	Principles of Management		3
MKT 2013	Marketing		3
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
MCS 1224	Survey of Calculus		4
MGT 2113	Intro. to Business Law		3
SSC 2413	Foundations of American Exp.		3
GEN xxx3	General Elective		3
		TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2013	Intro. to Financial Accounting		3
MKT 2123	Entrepreneurship		3
MCS 2124	Statistics		4
SSC 2423	Development of the American Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 1		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ACC 2023	Intro. to Managerial Accounting		3
INT 2103	Info. Tech. Management		3
LLT 1213	World Masterpieces 1		3
MKT 3603	Integrated Marketing Communication		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
		TOTAL	16

Lawrence Technological University

Junior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
FIN 3103	Financial Management		3
LLT 1223	World Masterpieces 2		3
MKT 4023	Digital Marketing		3
SSC 2303	Principles of Economics		3
HRM 3023	Human Resource Management		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 6043	Global Leadership		3
MGT 3053	Business Internship		3
MKT 4013	Consumer Behavior		3
SSC 2403	Principles of Economics 2		3
xxx3	General Elective		3
		TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MBA 7063	Project Management		3
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective		3
MGT 3033	International Trade		3
MGT 4023	Simulation and Mgmt. Science		3
MKT 3213	Marketing Research		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2113	Speech		3
MGT 4213	Strategic Mgmt. and Business Policy		3
MGT 4113	Applied Decision Analysis		3
MKT 4033	Entrepreneurship		3
MBA 6063	Operations Management		3
		TOTAL	15

Graduate Year

FIRST SEMESTER (SUMMER)

Course Number	Subject		Cr. Hrs.
INT 6043	Management Information Systems		3
xxx3	Elective		3
		TOTAL	6

SECOND SEMESTER (FALL)

Course Number	Subject		Cr. Hrs.
MBA 6003	Financial Management		3
ACC 6003	Managerial Accounting		3
ECN 6023	Global Business Economics		3
		TOTAL	9

THIRD SEMESTER (SPRING)

Course Number	Subject		Cr. Hrs.
MBA 6033	Corporate Finance		3
MBA 6073	Global Strategic Management		3
xxx3	Graduate Elective		3
		TOTAL	9

4+1 BSIT/MSIT
TOTAL CREDIT HOURS: 141

Freshman Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
COM 1103	College Composition		3
MCS 1074	Precalculus		4
INT 2103	Info. Tech. Management		3
MGT 2203	Principles of Management		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
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 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
GEN xxx3	General 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 Exp.		3
BIO/CHM/FSC/GLG/PHY xxx3	Natural Science 2		3
BIO/CHM/FSC/GLG/PHY xxx1	Natural Science Lab		1
GEN xxx3	General Elective		3
		TOTAL	16

Lawrence Technological University

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
SSC 2423	Development of American Exp.		3
INT 3603	Human Computer Interaction		3
GEN xxx3	General Elective		3
GEN xxx3	General Elective		3
INT 3/4xx3	Major 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 6103	Python for Data Analysis & Visualization		3
MGT 3103	Project Management		3
INT 3/4xxx3	Major Elective		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MKT 2123	Entrepreneurship		3
LLT/SSC/PSY 3xx3/4xx3	Humanities Elective		3
INT 3/4xxx3	Major Electives		3
INT 3/4xxx3	Major Elective		3
INT 6113	Database Management Systems		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
INT 4303	IT Capstone		3
INT 6123	Systems Analysis & Design		3
INT 3/4xxx3	Major Electives		3
INT 3/4xxx3	Major Electives		3
		TOTAL	15

Graduate Year
FIRST SEMESTER (SUMMER)

Course Number	Subject		Cr. Hrs.
MBA 7063	Project Management		3
xxx3	Graduate Elective		3
		TOTAL	6

SECOND SEMESTER (FALL)

Course Number	Subject		Cr. Hrs.
INT 6143	Advanced Computer Networking		3
INT 7623	Data Science for Business		3
xxx3	Graduate Elective		3
		TOTAL	9

THIRD SEMESTER (SPRING)

Course Number	Subject		Cr. Hrs.
INT 7223	Cybersecurity		3
xxx3	Graduate Elective		3
		TOTAL	6

MINOR IN BUSINESS ADMINISTRATION

Almost any job 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 Business and Information Technology Undergraduate programs, contact Mina Jena, director of business programs, at 248.204.3050 or busit-srm@ltu.edu.

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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, 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.

The following Lawrence Tech College of Engineering undergraduate programs are individually accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

>   Bachelor of Science in Biomedical Engineering
>   Bachelor of Science in Civil Engineering
>   Bachelor of Science in Computer Engineering
>   Bachelor of Science in Electrical Engineering
>   Bachelor of Science in Mechanical Engineering
>   Bachelor of Science in Robotics Engineering

The following Lawrence Tech College of Engineering integrated baccalaureate-master's level program is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

>   Master of Science in Architectural Engineering

The following Lawrence Tech College of Engineering undergraduate program is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org.

>   Bachelor of Science in Mechanical and Manufacturing Engineering Technology

DEGREE PROGRAMS
The college provides undergraduate degree programs in audio engineering technology, biomedical engineering, civil engineering, computer, construction engineering technology and management, electrical engineering, industrial engineering, mechanical engineering and robotics engineering, and mechanical and manufacturing engineering technology.

Bachelor of Science in Biomedical Engineering
Lawrence Technological University's Bachelor of Science in 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 Engineering Accreditation Commission (EAC) of ABET, abet.org.

The Bachelor of Science in Biomedical Engineering degree requires a total of 132 credit hours.

Program 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. Graduates of the Bachelor of Science in Biomedical Engineering program are expected to:

1. Apply science and engineering principles in order to lead innovative cross-functional teams that develop, design, implement, and communicate medical technologies, services, and translational research while adhering to professional standards and regulatory protocols
2. Exhibit and demand the highest engineering, medical and professional safety and ethical standards of conduct
3. Be contributing members of the profession and society, and stay informed of current research and professional developments through life-long education, possibly including 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. Upon graduation, students are expect to obtain the following Student Outcomes:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Bachelor of Science in Civil Engineering

The Department of Civil and Architectural Engineering offers a Bachelor of Science in 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 "Theory and Practice."

Lawrence Technological University

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 Bachelor of Science in Civil Engineering degree program at Lawrence Tech is accredited by the Engineering Accreditation Commission (EAC) of ABET, abet.org. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

Program Educational Objectives

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 Bachelor of Science in 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 and equitable solutions
2. Serve as leaders and contributing members in collaborative and inclusive 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, to identify and address their needs through effective communication of engineering perspectives and solutions

Student Outcomes

Industry leaders have high expectations for graduating civil engineering students. The *Civil Engineering Body of Knowledge 3* Task Committee (CEBOK3TC), sponsored by the committee of education under the American Society of Civil Engineers (ASCE), created the *Civil Engineering Body of Knowledge, Third Edition (CEBOK3)*. *CEBOK3* describes ASCE's vision for the skills and abilities the next generation of civil engineers must possess in order to be competent practitioners.

Lawrence Technological University

The Bachelor of Science in Civil Engineering program adapted the *CEBOK3* and the Student Outcomes are listed below.

Foundational Outcomes

1. **Mathematics**: Apply mathematics, including differential equations to solve engineering problems
2. **Natural Sciences**: Apply principles of natural science to solve engineering problems
3. **Social Sciences**: Apply concepts and principles of social sciences relevant to civil engineering
4. **Humanities**: Apply aspects of the humanities to the solution of civil engineering problems

Engineering Fundamentals Outcomes

5. **Materials Science:** Apply concepts and principles of materials science to solve civil engineering problems
6. **Engineering Mechanics**: Apply concepts and principles of solid and fluid mechanics to solve engineering problems
7. **Experiment Methods and Data Analysis**: Develop and conduct civil engineering experiments in at least four technical areas, and analyze and report on the experimental data
8. **Critical Thinking and Problem Solving**: Use a critical thinking process to formulate an effective solution to a complex civil engineering problem

Technical Outcomes

9. **Project Management**: Develop and analyze the components of project management plans for a comprehensive civil engineering project
10. **Engineering Economics**: Apply engineering economics concepts and principles to make civil engineering decisions
11. **Risk and Uncertainty**: Apply concepts and principles of probability and statistics to address uncertainty and risk relevant to civil engineering
12. **Breadth in Civil Engineering Areas**: Apply concepts and principles to solve problems in at least four technical areas appropriate to civil engineering
13. **Design**: Apply an engineering design process to complex engineering problems in a minimum of two civil engineering technical area
14. **Depth in a Civil Engineering Area**: Apply concepts and principles to solve complex engineering problems in a minimum of two civil engineering specialty areas
15. **Sustainability**: Apply principles of sustainability in the solution of civil engineering problems

Professional Outcomes

16. **Communication**: Prepare and present technical content to both specialized and general audiences in an effective manner within verbal, written, and graphical formats
17. **Teamwork and Leadership**: Apply concepts and principles of teamwork, leadership, inclusion and diversity in the solution of civil engineering problems

18. **Lifelong Learning**: Acquire and apply new knowledge as needed, using appropriate learning strategies
19. **Professional Attitudes**: Practice professional attitudes relevant to the practice of engineering
20. **Professional Responsibilities**: Explain professional expectations relevant to the practice of civil engineering
21. **Ethical Responsibilities**: Analyze ethical dilemmas to recommend and justify a course of action

At the graduate level, the Department of Civil and Architectural Engineering offers a Master of Science in Civil Engineering, Master of Construction Engineering Management, Doctor of Philosophy in Civil Engineering, Graduate Certificate in Structural Engineering, Graduate Certificate in Transportation Engineering, and a Graduate Certificate in Integrated Project Delivery. These programs are described in the *Graduate Catalog*.

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 Computer Engineering, a Bachelor of Science in Electrical 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 Bachelor of Science in Computer, Electrical, 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, or by emailing rdobbins@ltu.edu.

The Bachelor of Science in Computer Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, abet.org. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

Program Educational Objectives
The Department of Electrical and Computer Engineering offers a Bachelor of Science in Computer Engineering program in which students acquire the education and skill set so that, as alumni, they may achieve the following Program Educational Objectives:

1. Apply problem solving and critical judgment skills to benefit a globally complex society
2. Be a contributing member of a multidisciplinary engineering project team
3. Grow in professional capability and responsibility to assume leadership roles in industry
4. Build strong technical foundations to pursue higher education and advanced research skills

Student Outcomes
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 student outcomes for the Bachelor of Science in Computer Engineering program are:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

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, or by emailing rdobbins@ltu.edu.

Program Educational Objectives

The Bachelor of Science in Electrical Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, 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 Program Educational Objectives:

1. Apply problem solving and critical judgment skills to benefit a globally complex society
2. Be a contributing member of a multidisciplinary engineering project team
3. Grow in professional capability and responsibility to assume leadership roles in industry
4. Build strong technical foundations to pursue higher education and advanced research skills

Student Outcomes

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 student outcomes for the Bachelor of Science in Electrical Engineering program are:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences

4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

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's "theory and practice" approach.

Program Educational Objectives
The Department of Electrical and Computer Engineering offers a Bachelor of Science in Embedded Software Engineering program in which students acquire the education and skill set so that, as alumni, they achieve the following Program Educational Objectives:

1. Apply problem solving and critical judgment skills to benefit a globally complex society
2. Be a contributing member of a multidisciplinary engineering project team
3. Grow in professional capability and responsibility to assume leadership roles in industry
4. Build strong technical foundations to pursue higher education and advanced research skills

Student Outcomes
The student outcomes for the Bachelor of Science in Embedded Software Engineering program are:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

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-semester embedded software engineering 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.

Program Educational Objectives
The Program Educational Objectives of the Bachelor of Science in Industrial Engineering program are:

1. Graduates will lead teams and/or become technical expertise leaders to proficiently and successfully address multidisciplinary technical problems in a global work environment
2. Graduates will use critical thinking, business acumen, effective communication skills, and in a team setting to create and implement innovative engineering solutions that meet customer needs
3. Graduates will have the ability and courage to demonstrate ethical behaviors and judgement in their engineering careers regardless of the consequences
4. Graduates will 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.

Lawrence Technological University

Student Outcomes

The student outcomes for the Bachelor of Science in Industrial Engineering program are:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Lawrence Tech also offers graduate programs through the A. Leon Linton Department of Mechanical, Robotics, and Industrial 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 Mechatronics and Robotics Engineering, and Ph.D. in Mechanical Engineering. These programs are described in the Graduate Catalog.

Bachelor of Science in Mechanical Engineering

The mission of the A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering is to prepare students to be leaders in mechanical engineering careers, capable of producing innovative solutions. The department's vision is to be the institution of choice for mechanical engineering education, encompassing technical leadership, innovation, and service.

The Bachelor of Science in Mechanical Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, 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, Robotics and Industrial Engineering Advisory Board and other important program constituencies, are listed below.

Program Educational Objectives

The Program Educational Objectives of the Bachelor of Science in Mechanical Engineering program are:

1. Graduates will lead teams and/or become technical expertise leaders to proficiently and successfully address multidisciplinary technical problems in a global work environment
2. Graduates will use critical thinking, business acumen, effective communication skills, and in a team setting to create and implement innovative engineering solutions that meet customer needs
3. Graduates will have the ability and courage to demonstrate ethical behaviors and judgement in their engineering careers regardless of the consequences
4. Graduates will 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 Bachelor of Science in 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 A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering office, room E29.

The Bachelor of Science in Mechanical Engineering program integrates the design experience throughout its curriculum. This experience starts with the freshman-level Fundamentals of Engineering Design Projects 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.

Student Outcomes
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 student outcomes for the Bachelor of Science in Mechanical Engineering program are:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Lawrence Tech also offers graduate programs through the A. Leon Linton Department of Mechanical, Robotics, and Industrial 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 Mechatronics and Robotics Engineering, and Ph.D. 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 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.

The Bachelor of Science in Robotics Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, 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 robotics engineering program's educational objectives, formulated by the faculty in consultation with the Robotics Engineering Advisory Board and other important program constituencies, are listed below.

Program Educational Objectives

Lawrence Technological University

The Program Educational Objectives of the Bachelor of Science in Robotics Engineering program are:

1. Graduates will lead teams and/or become technical expertise leaders to proficiently and successfully address multidisciplinary technical problems in a global work environment
2. Graduates will use critical thinking, business acumen, effective communication skills, and in a team setting to create and implement innovative engineering solutions that meet customer needs
3. Graduates will have the ability and courage to demonstrate ethical behaviors and judgement in their engineering careers regardless of the consequences
4. Graduates will engage in lifelong learning and contribute to the engineering profession in order to address contemporary engineering and societal challenges

Students in the Bachelor of Science in 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

Student Outcomes
According to ABET, student outcomes are "statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program."

The student outcomes for the Bachelor of Science in Robotics Engineering program are:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Lawrence Tech also offers graduate programs through the A. Leon Linton Department of Mechanical, Robotics, and Industrial 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 Mechatronics and Robotics Engineering, and Ph.D. in Mechanical Engineering. These programs are described in the *Graduate Catalog*.

Master of Science in Architectural Engineering
Integrated baccalaureate-master's program
Lawrence Technological University's Master of Science in Architectural Engineering program is a five-year, direct-entry, integrated baccalaureate-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.

Master of Science in Architectural Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, abet.org.

The Master of Science in Architectural Engineering requires a total of 164 credit hours (134 undergraduate credits and 30 graduate credits), which includes courses in the four primary discipline areas, including building mechanical systems, building electrical systems, structural engineering, and construction management.

Students are required to maintain a 3.0 GPA at the undergraduate level and at the graduate level 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.

Program Educational Objectives
The Master of Science in Architectrual Engineering 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 a Master of Science in Architectural Engineering program in which students acquire the education and skill set so that, upon graduation, they are prepared to achieve the following Program Educational Objectives:

1. Acquire knowledge to integrate building design and aesthetics including mechanical, electrical and structural systems for the built environment and to articulate solutions using written, visual and oral communications skills
2. Incorporate sustainable practices, problem solving skills, leadership, and knowledge of constructability to effectively aid the design of a functional built environment and fulfill the worldwide need for skilled building system engineers and designers

3. Lead design and construction teams in developing conceptual designs, design drawings, construction drawings, specifications, and construction administration for functional, sustainable, and resilient buildings in a global market
4. Create built environments to promote health, comfort, and productivity of building occupants and to optimize cost-effective solutions meeting business case objectives.

Student Outcomes

Industry leaders have high expectations for graduating architectural engineering students. The American Society of Civil Engineers (ASCE) created the *Civil Engineering Body of Knowledge, Third* Edition (BOK3), which describes its vision for the skills and abilities the next generation of civil engineers must possess in order to be competent practitioners. The department adapted the ASCE *BOK3* outlined below as the basis for its Student Outcomes for the Master of Science in Architectural Engineering program:

1. Select appropriate concepts and principles of mathematics to solve architectural engineering problems
2. Apply concepts and principles of chemistry, calculus-based physics, and at least one other area of the natural sciences, to solve architectural engineering problems
3. Apply concepts and principles of social sciences relevant to architectural engineering
4. Apply aspects of the humanities to the solution of architectural engineering problems
5. Apply concepts and principles of materials science to solve architectural engineering problems
6. Select appropriate concepts and principles of solid and/or fluid mechanics to solve architectural engineering problems
7. Select appropriate experiments and analyze the results in the solution of architectural engineering problems
8. Develop a set of appropriate solutions to a complex problem, question, or issue relevant to architectural engineering
9. Analyze components of a project management plan for a complex architectural engineering project
10. Apply concepts and principles of engineering economics in the practice of architectural engineering
11. Apply concepts and principles of probability and statistics to determine risk relevant to architectural engineering
12. Integrate solutions to complex problems that involve multiple specialty areas appropriate to the practice of architectural engineering
13. Develop an appropriate design alternative for a complex architectural engineering project that considers realistic requirements and constraints
14. Assess advanced concepts and principles in the solutions of complex problems to develop a mastery in a specialty area of architectural engineering
15. Apply concepts and principles of sustainability to the solution of complex architectural engineering problems
16. Integrate different forms of effective and persuasive communication to technical and nontechnical audiences
17. Apply concepts and principles of teamwork and leadership, including diversity and inclusion, in the solutions of architectural engineering problems

18. Integrate new knowledge, skills, and attitudes acquired through self-directed learning into the practice of architectural engineering
19. Explain professional attitudes relevant to the practice of architectural engineering, including creativity, curiosity, flexibility, and dependability
20. Apply professional responsibilities relevant to the practice of architectural engineering, including safety, legal issues, licensure, credentialing, and innovation
21. Apply appropriate reasoning to an ethical dilemma

FUNDAMENTALS OF ENGINEERING EXAM
Candidates for degrees in biomedical, civil, electrical, computer, mechanical, robotics 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
Bachelor's degree programs in the Department of Engineering Technology are engineering application-oriented degrees using engineering math and science, engineering design, and laboratory experience.

Mission
To prepare students for leading careers capable of producing creative and practical solutions in various engineering technologies.

The department offers three Bachelor degree programs as follows:

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 engineering. Graduates are expected to be competent in audio engineering 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.

Program Educational Objectives
Program Educational Objectives are that within a few years, Bachelor of Science in Audio Engineering Technology graduates will be able to:

1. Employ theory and practice learned through their curriculum to propose solutions to technical problems, analyze engineering alternatives and perform critical tasks in their field
2. Become effective team collaborators and innovators, supporting efforts to address technical, business and social challenges
3. Assume management, entrepreneurial, and leadership roles in audio and related industries
4. Engage in life-long learning through professional development opportunities and graduate programs in engineering and business

Student Outcomes
To enable graduates to achieve the Program Educational Objectives and in accordance with ABET Student Outcomes recommendations, the program empowers the students with specific set of skills and knowledge. Students graduating from this program must have obtained the following Student Outcomes:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly defined engineering problems appropriate to the discipline
2. An ability to design systems, components, or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline
3. An ability to apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature
4. An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes
5. An ability to function effectively as a member as well as a leader on technical teams

Bachelor of Science in Construction Engineering Technology and Management
The Bachelor of Science in Construction Engineering Technology and Management program is distinguished for providing a strong concentration in construction engineering applications and construction project management. 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 program is designed to provide students interested in the field and working professionals with skills and experience in the construction industry. 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 excellent industrial experience make this program highly responsive to students' individual needs.

Program Educational Objectives
Program Educational Objectives are that within a few years, Bachelor of Science in Construction Engineering Technology and Management graduates will be able to:

1. Employ theory and practice learned through their curriculum to propose solutions to technical problems, analyze engineering alternatives and perform critical tasks in their field
2. Become effective team collaborators and innovators, supporting efforts to address technical, business and social challenges
3. Assume management, entrepreneurial, and leadership roles in construction and related industries
4. Engage in life-long learning through professional development opportunities and graduate programs in engineering and business

Student Outcomes
To enable graduates to achieve the Program Educational Objectives and in accordance to American Council for Construction Education (ACCE) Student Outcomes recommendations, the program empowers the students with specific set of skills and knowledge. Students graduating from this program must have obtained the following outcomes:

1. Utilize techniques that are appropriate to administer and evaluate construction contracts, documents, and codes
2. Estimate costs, estimate quantities, and evaluate materials for construction projects
3. Utilize measuring methods, hardware, and software that are appropriate for field, laboratory, and office processes related to construction
4. Apply fundamental computational methods and elementary analytical techniques in sub-disciplines related to construction engineering
5. Produce and utilize design, construction, and operations documents
6. Perform economic analyses and cost estimates related to design, construction, and maintenance of systems associated with construction engineering
7. Select appropriate construction materials and practices
8. Apply appropriate principles of construction management, law, and ethics
9. Perform standard analysis and design in at least one sub-discipline related to construction engineering

Bachelor of Science in Mechanical and Manufacturing Engineering Technology
The Bachelor of Science in Mechanical and Manufacturing Engineering Technology program provides a strong foundation in mechanical, manufacturing, and electrical engineering technologies.

Lawrence Technological University

It is a unique program that has three clusters of courses: Engineering Technology (includes manufacturing processes, engineering mechanics, transducers and instrumentation); Manufacturing Quality (includes Six Sigma, lean manufacturing); and Technical Management (includes engineering project management, operations management).

The Bachelor of Science in Mechanical and Manufacturing Engineering Technology degree program is accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, abet.org

In addition to being an ABET accredited program, the program is also accredited by the Council for Six Sigma Certification (CSSC) to offer a unique opportunity for the enrolled students to become Six Sigma certified at the Black Belt level as they are pursuing their degree.

Graduates of engineering technology, engineering, and sciences are instrumental in product development, building or testing equipment, preparing and conducting experiments, analyzing results, or building prototype versions of newly designed products and equipment, or in research. Others work in quality control – inspecting products and processes.

Program Educational Objectives
Program Educational Objectives are that within a few years, Bachelor of Science in Mechanical and Manufacturing Engineering Technology graduates will be able to:

1. Employ theory and practice learned through their curriculum to propose solutions to technical problems, analyze engineering alternatives and perform critical tasks in their fiel
2. Become effective team collaborators, leaders and innovators, supporting efforts to address technical, business and social challenge
3. Assume management, entrepreneurial, and leadership roles in manufacturing, product development, and related industries
4. Engage in life-long learning through professional development opportunities and graduate programs in engineering and business

Student Outcomes
To enable graduates to achieve the Program Educational Objectives and in accordance to ABET Student Outcomes recommendations, American Society of Mechanical Engineering (ASME), and the Society of Manufacturing Engineering (SME), the program empowers our students with specific set of skills and knowledge. Students graduating from this program must have obtained the following Student Outcomes:

1. Apply principles of geometric dimensioning, tolerancing, computer aided drafting and design
2. Select, set-up, and calibrate instrumentations
3. Use solid mechanics, statics and dynamics in mechanical system design needs
4. Solve problems in differential and integral calculus
5. Apply materials science, select and measure strength of materials
6. Analyze manufacturing processes and systems
7. Apply principles of thermal sciences
8. Evaluate currents and analyze electrical circuits and control

9. Follow up product design, tooling and assembly processes
10. Perform quality analysis, continuous improvement, and industrial management procedures
11. Communicate technically and efficiently in engineering presentations and reports

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 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

Course Number	Subject	Cr. Hrs.
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
BIO 3203	Anatomy and Physiology	3
BIO 3201	Anatomy and Physiology Lab	1
CHM 2103	General, Organic, and Biochemistry	3
CHM 2101	General, Organic, and Biochem. Lab	1
	TOTAL	18

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
EGE 2123	Entrepreneurial Engr. Design Studio	3
EGE 2013	Statics	3
	TOTAL	16

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 3403	Probability and Statistics	3
EGE 3022	Ldrshp. and Prof. Dev. for Engrs.	2
EEE 2123 –**or**– TEE 3103	Circuits and Electronics –**or**– DC/AC Circuits	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
BME 3002	Biomedical Best Practices*	2
BME 3011	Intro to Biomedical Projects	1
BME 3103	Bioinstrumentation	3
BME 3101	Bioinstrumentation Lab	1
BME 3213	Biomaterials	3
	TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY 3/4xx3	Junior/Senior Humanities Elective	3
EEE 4xx3	Technical Elective	3
EGE 3012	Engineering Cost Analysis	2
BME 3/4xx3	BME Elective	3
BME 4012	BME Projects 1**	2
BME 4803	Tissue Engineering	3
BME 4801	Tissue Engineering Lab	1
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
BME 3/4xxx3	BME Elective	3
BME 4023	BME Projects 2***	3
BME 4313	Tissue Mechanics	3
BME 4203	Intro. to MEMS	3
BME 4103	Foundations of Medical Imaging	3
	TOTAL	15

*Sophomore standing required
**Senior standing required and minimum of 12 credits from BME 3xx3 courses
***Must be enrolled/have completed all BME 3xx3 courses

A list of eligible BME and 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 Department of Biomedical Engineering, 248.204.2660, room J353, for their assigned faculty advisor.

BACHELOR OF SCIENCE IN CIVIL ENGINEERING
TOTAL 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
SSC 2423	Development of American Experience		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.
ECE 3424	Soil Mechanics		4
ECE 3013	Mechanics of Materials for CE		3
ECE 3011	Mechanics of Materials for CE Lab		1
ECE 3823	Transportation Engineering		3
ECE 3821	Transportation Engineering Lab		1
ECE 3213	Construction Engineering		3
ECE 3211	Construction Engineering Lab		1
EGE 3022	Leadership and Prof. Dev. for Engr.		2
		TOTAL	18

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
ECE 3324	Environmental Engineering 1		4
MCS 3403	Probability and Statistics		3
ECE 3523	Hydromechanics		3
ECE 3723	Theory of Structures		3

Course Number	Subject	Cr. Hrs.
EME 3043	Dynamics	3
	TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
ECE 4022	CE Design Project 1	2
ECE 4243	Construction Project Management	3
ECE 4544	Hydraulic Engineering	4
ECE 4/5xx3	Civil Engineering Elective*	3
ECE 4/5xx3	Civil Engineering Elective*	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ECE 4032	CE Design Project 2	2
ECE 4743	Concrete Design	3
ECE 4761	Structural Design/Testing Lab	1
ECE 4051	Ethics and Professional Issues	1
LLT/SSC 3/4xx3	Junior/Senior Elective	3
ECE 4/5xx3	Civil Engineering Elective*	3
ECE 4/5xx3	Civil Engineering Elective*	3
	TOTAL	16

See your academic advisor for Civil Engineering elective requirements and additional information on your degree program.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING
TOTAL 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.*
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 3011	Intro. to ECE Projects	1
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 3022	Leadership and Prof. Dev. for Eng.	2
	TOTAL	16

Senior Year

Lawrence Technological University

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
EEE 4243	Embedded Systems		3
EEE 4253	Computer Architecture 1		3
EEE 4514	Control Systems and Lab		4
EEE 4812	ECE Capstone Projects 1		2
MCS 2513	Software Engineering 1		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
EEE 4xx3*	EE Technical Elective*		3
EEE/MCS 3/4xx3**	EE or Comp. Sci. Technical Elective**		3
EEE 3/4xx1	EE Lab		1
EEE 4273	Real Time Systems		3
EEE 4822	ECE Capstone Projects 2		2
EGE 3361	Business Plans		1
LLT/SSC/PSY 3/4xx3	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, or by emailing rdobbins@ltu.edu.

**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 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.
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 3011	Intro. to ECE Projects	1
EEE 3314	Electronics	4
EEE 3311	Electronics Lab	1
EEE 3414	Electromagnetic Fields	4
EEE xxx3	Concentration Course #1*	3

Course Number	Subject		Cr. Hrs.
EEE xxx1	EE Lab		1
EGE 3012	Engr. Cost Analysis		2
		TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
EEE 3423	Signals and Systems		3
EEE 4514	Control Systems and Lab		4
EEE 4812	ECE Capstone Projects 1		2
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	ECE Capstone Projects 2		2
EEE 4xx3	Concentration Course #3*		3
EEE 4xx3	EE Technical Elective**		3
EEE 4xx1	EE Lab		1
LLT/SSC/PSY 3/4xx3	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 DTE Energy 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, or by emailing rdobbins@ltu.edu.*

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 CREDIT HOURS: 132
Freshman Year

Lawrence Technological University

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
EEE 1001	Intro. to ECE	1
EGE 1001	Fund. of Engr. Design Projects	1
MCS 1414	Calculus 1	4
	TOTAL	13

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 1514	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 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	3
EGE 2123	Entrepreneurial Eng Design Studio	3
	TOTAL	19

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.
EEE 2123	Circuits and Electronics	3
EEE 3223	Adv. Digital Electronics	3
EEE 3233	Microprocessors	3
EEE 3231	Microprocessor Lab	1
ESE 3011	Embedded Software Eng. Lab 3	1

MCS 2423	Differential Equations		3
MCS 3513	Software Architecture		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
EEE 3011	Intro. to ECE Projects		1
EEE/MCS 3/4xx3	Technical Elective*		3
EGE 3022	Leadership and Prof. Dev.		2
MCS 2534	Data Structures		4
MCS 3543	Database Systems		3
SSC 2423	Development of American Experience		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 Quality & Project Manag.		3
MCS 3403	Probability and Statistics		3
LLT/SSC/PSY 3/4xx3	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 4913	Directed Study in EE		
	Adv. Embedded Systems Lab		3
		TOTAL	14

A list of electrical and computer engineering technical electives is available from the Department of Electrical and Computer Engineering. Please contact the department, room S120, or email rdobbins@ltu.edu 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 CREDIT HOURS: 16

Course Number	Subject	Cr. Hrs.
EEE 3513	Power System Fundamentals	3
EEE 3511	Introduction to Electrical Systems Lab	1
EEE 4133	Electrical Machines	3
EEE 4131	Electrical Machinery Lab	1
EEE 5144	Power 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 following courses are required (11 credit 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 5444	Digital Communications	4
	TOTAL	17

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.

Lawrence Technological University

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING
TOTAL 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
EGE 2123	Entrepreneurial Eng. Design Studio	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
EGE 3022	Leadership and Prof. Develop. for Eng.		2
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
EIE 3753	Simulation in System Design		3
EIE 3123	Plant Layout		3
EIE 4673	Supply Chain Logistics		3
EIE 3353	Operations Research Techniques		3
EIE 3033	Eng. Numerical Methods		3
		TOTAL	15

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
EIE 4252	Senior Project Fundamentals		2
EIE 4453	Applied Operations Research		3
EIE 2653	Industrial Engineering Finance		3
EIE 4013	Work Design and Measurement		3
EIE 4/5xx3*	Technical Elective*		3
EIE 4/5xx3*	Technical Elective*		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
EIE 4253	Senior Capstone Project		3
EIE 4553	Occupational Ergonomics		3
EIE 4/5xx3*	Technical Elective*		3
EIE 4/5xx3*	Technical Elective*		3
LLT/SSC/PSY 3/4xx3	Junior/Senior Elective		3
		TOTAL	15

A list of approved electives is available in the A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering. All students can select 4xx3 courses from this list for their technical electives. Only those students whose overall GPA is at least 3.00 or whose GPA is 2.70 to 2.99 and has a grade B or better in all prerequisite courses may select 5xx3 courses for their technical electives.

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 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
MCS 3403	Probability and Statistics	3
EGE 1102	Engr. Computer Applications Lab	2
LLT 1223	World Masterpieces 2	3
EME 3013	Mechanics of Materials	3
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
EEE 2123	Circuits and Electronics	3

Course Number	Subject	Cr. Hrs.
EGE 3003	Thermodynamics	3
EME 3043	Dynamics	3
MCS 3863	Linear Algebra	3
EME 3023	Manufacturing Processes	3
EGE 3022	Leadership and Prof. Develop. for Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
EME 3112	Intro. to Projects	2
EME 3653	Measurement Systems	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 –**or**–	Comp. Proj. 1 –**or**–	
EME 4312	Indus. Spon. Proj. A	2
EME 4402	Mechanics Lab	2
EME 4013	Heat Transfer	3
EME 4654	Mechatronics	4
EME/MRE 4/5XX3*	Technical Elective*	3
EME/MRE 4/5XX3*	Technical Elective*	3
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
EME 4221 –**or**–	Comp. Proj. 2 –**or**–	1
EME 4321	Indus. Spon. Proj. B	
EME 4412	Thermal Science Lab	2
EME/MRE 4/5xx3*	Technical Elective*	3
EME/MRE 4/5xx3*	Technical Elective*	3
LLT/SSC/PSY 3/4xx3	Junior/Senior Elective	3
	TOTAL	12

A list of approved elective courses is available in the A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering or at the department Canvas site. All students can select 4xx3 courses from this list for their technical electives. Only those students whose overall GPA is at least 3.00 or whose GPA is 2.70 to 2.99 and has a grade B or better in all prerequisite courses may select 5xx3 courses for their technical electives.

Mechanical Engineering Advisor

Lawrence Technological University

All students should have an advisor-approved Plan of Work. Students should contact the A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering, room E29, ext. 2550, for their assigned faculty advisor.

BACHELOR OF SCIENCE IN ROBOTICS ENGINEERING
TOTAL CREDIT HOURS: 136

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
EGE 1001	Fund. of Engr. Design Projects	1
MCS 1514	Computer Science 1	4
MCS 1414	Calculus 1	4
COM 1103	College Composition	3
SSC 2413	Foundations of American Experience	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MRE 1011	Foundations of Robotics Engr.	1
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
EME 2012	Mechanical Engineering Graphics	2
MCS 2514	Computer Science 2	4
MCS 1424	Calculus 2	4
LLT 1213	World Masterpieces 1	3
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 2013	Statics	3
MCS 2414	Calculus 3	4
SSC 2423	Development of American Experience	3
COM 2103	Technical and Prof. Communication	3
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
EGE 3022	Leadership and Prof. Develop. for Eng.	2
MRE 2024	Unified Robotics I	4
EME 3043	Dynamics	3
EEE 2123	Circuits and Electronics	3
MCS 2423	Differential Equations	3
MCS 3403	Probability and Statistics	3
	TOTAL	18

Junior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MRE 3014	Unified Robotics II		4
EEE 2214	Digital Electronics and Lab		4
EME 3013	Mechanics of Materials		3
EME 3653	Measurement Systems		3
MCS 3863	Linear Algebra		3
		TOTAL	17

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
EME 3112	Introduction to Projects		2
MRE 3024	Unified Robotics III		4
EEE 3233	Microprocessors		3
MCS 2523	Discrete Mathematics		3
MRE 3114	System Modeling and Control		4
EGE 3012	Engineering Cost Analysis		2
		TOTAL	18

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MRE 4902	Capstone Projects 1		2
MRE 4014	Unified Robotics IV		4
MCS 2534	Data Structures		4
MRE 4113	Discrete Control		3
LLT 1223	World Masterpieces 2		3
		TOTAL	16

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
MRE 4912	Capstone Projects 2		2
EEE 4243	Embedded Systems		3
MRE/EME/EEE/MCS 4/5xx9*	Technical Electives*		9
LLT/SSC/PSY 3/4xx3	Junior/Senior Elective		3
		TOTAL	17

A list of approved elective courses is available in the A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering. All students can select 4xx3 courses from this list for their technical electives. Only those students whose overall GPA is at least 3.00 or whose GPA is 2.70 to 2.99 and has a grade B or better in all prerequisite courses may select 5xx3 courses for their technical electives.

Robotics Engineering Advisor
All students should have an advisor-approved Plan of Work. Students should contact the A. Leon Linton Department of Mechanical, Robotics, and Industrial Engineering, room E29, ext. 2550, for their assigned faculty advisor.

MASTER OF SCIENCE IN ARCHITECTURAL ENGINEERING

Lawrence Technological University

(INTEGRATED BACHELOR'S AND MASTER'S PROGRAM)
TOTAL CREDIT HOURS: 164
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 1102	Engineering Computer Applications Lab	2
EAE 1081	Intro. to Architectural Engineering	1
ARC 1213	Introduction to Visual Communication	3
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2413	Foundations of American Experience	3
EGE 1001	Fundamentals of Engineering Design Projects	1
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	3
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
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
MCS 2414	Calculus 3	4
EAE 2013	Building Information Modeling for AE	3
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1213	World Masterpieces 1	3
EGE 3022	Leadership and Prof. Development for Eng.	2
EGE 2013	Statics	3
EEE 2123	Circuits and Electronics	3
MCS 2423	Differential Equations	3
MCS 3403	Probability and Statistics	3
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3

Course Number	Subject	Cr. Hrs.
ECE 3013	Mechanics of Materials for CE	3
ECE 3011	Mechanics of Materials for CE Laboratory	1
EAE 3113	Electrical Systems I: Lighting	3
ECE 3523	Hydromechanics	3
EAE 3014	AE Integrated Design Studio 1	4
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ECE 3723	Theory of Structures	3
EAE 3613	Mech Systems I: HVAC, Plumbing, & FP	3
EGE 3003	Thermodynamics	3
ECE 3213	Construction Engineering	3
EAE 3024	Arch. Eng. Integrated Des. Studio 2	4
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY3/4xx3	Junior/Senior Elective	3
ECE 4753	Steel Design	3
EME 3033	Engineering Numerical Methods	3
EAE 4113	Electrical Systems II: Power	3
EAE 4613	Mech Systems II: HVAC	3
EAE 4022	Arch. Eng. Capstone 1	2
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
ECE 4743	Concrete Design	3
EAE 4623	Architectural Acoustics	3
EAE 4633	Fundamentals of Building Physics	3
EAE 4032	Arch. Eng. Capstone 2	2

Four additional credits depending on track selected by students:

Structural Track

Course Number	Subject	Cr. Hrs.
ECE 3424	Soil Mechanics	4

Non-Structural Track

Course Number	Subject	Cr. Hrs.
ECE 4243	Construction Project Management	3
ECE 3211	Construction Engineering Laboratory	1
	TOTAL	15

Fifth Year (Graduate Coursework)

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
ECE 5623	Building Controls and Instrumentation	3
ECE 5633	Advanced Building Physics	3
EAE 5113	Advanced Daylighting/Lighting Systems	3
EAE 6000	AE Graduate Seminar	0
EAE 5/6xx3	Technical Elective	3

Course Number	Subject		Cr. Hrs.
EAE 5/6xx3	Technical Elective		3
		TOTAL	15

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
EAE 5613	Building Integrated Renewable Energy Sys.		3
EAE 5123	Advanced Electrical Systems		3
EAE 6013	AE Graduate Project		3
EAE 5/6xx3	Technical Elective		3
EAE 5/6xx3	Technical Elective		3
		TOTAL	15

Acceptable Technical Electives (EAE 5/6xx3) are dependent on the students selected specialization of either structural engineering, electrical systems, mechanical systems, or construction engineering/management.

Architectural Engineering Advisor

All students should have an advisor-approved Plan of Work and should consult their academic advisors or the Director of Architectural Engineering, Dr. Keith Kowalkowski at kkowalkow@ltu.edu, 248.204.2583, or in room E21 for further information. A flow chart is available for a graphic visualization of the program and includes the following courses:

BACHELOR OF SCIENCE IN AUDIO ENGINEERING TECHNOLOGY

TOTAL CREDIT HOURS: 126

Freshman Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
MCS 1074	Precalculus		4
COM 1103	College Composition		3
SSC 2303	Principles of Economics		3
TAS 1013	Music for Audio Tech. 1		3
		TOTAL	13

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
COM 2103	Technical and Prof. Communication		3
MCS 1414	Calculus 1		4
PHY 2213	College Physics 1		3
PHY 2221	College Physics 1 Lab		1
LLT 1213	World Masterpieces 1		3
TAS 1033	Music for Audio Tech. 2		3
		TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
TAS 3033	Audio Principles 1		3
TME 2003	Computer Aided Analysis		3

TEE 2033	Electronics 1	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
	TOTAL	13

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT 1223	World Masterpieces 2	3
TAS 3043	Audio Principles 2	3
TEE 2053	Electronics 2	3
TEE 2093	Electronics 3	3
CHM 1154	Intro to Chemistry Principles	4
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2413	Foundations of American Experience	3
TAS 3013	Adv. Audio Principles 1	3
EGE 3022	Leadership & Prof. Develop. For Eng.	2
GEN xxx3	General Elective	3
MCS 3324	Applied Calc. and Diff. Eq.	4
TME 3113	Engr. Mechanics	3
	TOTAL	18

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
TME 3333	Six Sigma 1	3
LLT/SSC/PSY 3/4xx3	LLT/SSC/PSY Junior/Senior Elective	3
TAS 3053	Adv. Audio Principles 2	3
TEE 3103	DC/AC Circuits	3
SSC 2423	Development of Amer. Experience	3
TAS 3034	Audio Acoustics	4
	TOTAL	19

Senior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
TAS 4103	Audio Senior Project	3
TIE 3203	Technology Project Management	3
TAS 4133	Audio System Integration	3
TEE 4224	Transducers and Instrumentation	4
TIE 3163	Engr. Economic Analysis	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

Course Number	Subject	Cr. Hrs.
TAS/TCE/TEE/ TIE/TME xxx3	Tech. Elective	3
	TOTAL	14

BACHELOR OF SCIENCE IN CONSTRUCTION ENGINEERING TECHNOLOGY AND MANAGEMENT

TOTAL CREDIT HOURS: 126

Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3
MCS 1074	Precalculus	4
CHM 1154	Intro. Chemistry Principles	4
TCE 1023	Architectural Graphics	3
SSC 2303	Principles of Economics	3
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Prof. Communication	3
MCS 1414	Calculus 1	4
LLT 1213	World Masterpieces 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
	TOTAL	14

Sophomore Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2413	Foundations of American Experience	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
TAS/TCE/TEE/ TIE/TMExxx3	Tech. Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
MGT 2203	Principles of Management	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 3/4xx3	HRM Junior/Senior Elective	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 and Prof. Develop. for Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY 3/4xx3	LLT/SSC/PSY 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**–	
TAS/TCE/TEE/		
TIE/TME 3/4xx3	Junior/Senior Tech. Elective	3
TCE 4113	Construction Safety	3
TME 4113	Computer Design Graphics	3
HRM 3/4xx3	HRM Junior/Senior Elective	3
TME 4103	Engr. Materials	3
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
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	14

**BACHELOR OF SCIENCE IN
MECHANICAL AND MANUFACTURING ENGINEERING TECHNOLOGY**
TOTAL CREDIT HOURS: 127
Freshman Year
FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
COM 1103	College Composition	3
MCS 1074	Precalculus	4
TME 2003	Computer Aided Analysis	3
TAS/TCE/TEE/		
TIE/TMExxx3	Tech. Elective	3

Course Number	Subject	Cr. Hrs.
CHM 1154	Intro. Chemistry Principles	4
	TOTAL	17

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
COM 2103	Technical and Prof. Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1414	Calculus 1	4
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
TAS/TCE/TEE/ TIE/TMExxx3	Tech. Elective	3
	TOTAL	17

Sophomore Year

First SEMESTER

Course Number	Subject	Cr. Hrs.
MGT 2203	Principles of Management	3
SSC 2303	Principles of Economics	3
SSC 2413	Foundations of American Experience	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
GEN xxx3	General Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
SSC 2423	Development of American Experience	3
TME 3333	Six Sigma 1	3
LLT 1223	World Masterpieces 2	3
TAS/TCE/TEE/ TIE/TMExxx3	Tech. Elective	3
TAS/TCE/TEE/ TIE/TMExxx3	Tech. Elective	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
MCS 3324	Applied Calculus and Differential Eq.	4
TIE 3203	Technology Project Management	3
TIE 3063	Manufacturing Engr. Processes	3
TME 3113	Engineering Mechanics l	3
EGE 3022	Leadership & Prof. Develop. for Eng.	2
	TOTAL	15

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
LLT/SSC/PSY xxx3	LLT/SSC/PSY Junior/Senior Elective	3
TEE 3103	DC/AC Circuits	3
TME 3204	Appl. Thermo-Fluids	4

TAS/TCE/TEE/			
TIE/TMExxx3	Tech. Elective		3
TME5343	Six Sigma 2		3
		TOTAL	16

Senior Year
FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
HRM 3/4xx3	HRM Junior/Senior Elective		3
TIE 3163	Engr. Economic Analysis		3
MGT 3113	Operations Management		3
TME 4103	Engr. Materials		3
TEE 4224	Transducers and Instr.		4
		TOTAL	16

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

Black Belt Certificate in Six Sigma

The Department of Engineering Technology is accredited by the council of Six Sigma Certification to issue a Six Sigma Certificate at the Black Belt level for qualified students. This certification is embedded in the curriculum and does not require extra course work.
For more information, please contact Dr. Sabah Abro, sabro@ltu.edu 248.204.2069.

Specs@LTU

Program Director
Jeremy Anderson
OFFICE, 248.204.3068

ABOUT SPECS@LTU

Lawrence Technological University is continuing the Specs Howard School of Media Arts legacy. Whether you work toward a certificate or a degree, or you take online or on campus classes, you will learn the latest technology and gain hands-on experience. Access to state-of-the art equipment, project-based coursework, and LTU's theory and practice education, prepare you for a broad spectrum of careers within the media industry.

UNDERGRADUATE DEGREE PROGRAMS
Specs@LTU offers the following undergraduate programs:

Lawrence Technological University

Certificate in Broadcast Media Arts
Certificate in Digital Media Arts
Certificate in Graphic Design

CERTIFICATE IN BROADCAST MEDIA ARTS

This 12-month program teaches radio, television and new-media broadcasting, on-air and on-camera presentation, live broadcasts, news and feature writing, lighting techniques, camera operation, voice work, field production, digital editing, graphics for broadcast and career preparation.

Graduates will possess the knowledge, skills, and competencies to:
- Write news stories for on-air broadcast
- Demonstrate an understanding of software and equipment typically found in industry
- Demonstrate proper technique when performing live for radio, television, and other audio and video settings
- Create video and audio content for broadcast distribution
- Demonstrate confidence in working in the broadcast industry and communicating in industry-standard language
- Understand various position within the broadcast industry

Industry Employment Opportunities
- radio on-air talent (DJ and/or news)
- marketing/promotions
- on-camera reporter
- camera operator
- producer
- editor
- writer
- production assistant
- video technician
- sports broadcaster

CERTIFICATE IN BROADCAST MEDIA ARTS
 TOTAL CREDIT HOURS: 30

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
BMA 1015	Fundamentals of Radio		5
BMA 1025	Fundamentals of Television		5
		TOTAL	10

SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
BMA 1035	Digital Audio Concepts	5
BMA 1045	Digital Video Concepts	5

		TOTAL	10

THIRD SEMESTER

Course Number	*Subject*		*Cr. Hrs.*
BMA 1055	On-Air Radio		5
BMA 1065	TV Field Production		5
		TOTAL	10

CERTIFICATE IN DIGITAL MEDIA ARTS

The Digital Media Arts program trains students in digital video and image production, editing and technical operation and offers hands-on experience in areas from project management and script writing, to image manipulation, HD camera operation, pre- and post-production and career preparation. Upon completion of this 12-month program, successful graduates will be able to create professional video projects.

Graduates will possess the knowledge, skills and competencies to:
- Demonstrate a basic understanding of video camera operation, scene lighting, and audio recording
- Write and produce various types of video for broadcast and distribution via the web
- Create print and motion graphics projects using multiple software programs
- Design and maintain a basic website
- Use social media and a web-based portfolio for self-promotion
- Demonstrate a basic understanding of story structure
- Analyze and criticize a variety of digital media art forms
- Interpret scripts, draw storyboards, and create shot lists
- Export and upload video to the web

Industry Employment Opportunities
- video production companies
- post-production facilities
- advertising agencies
- corporate marketing department
- news agencies
- TV production departments
- film sets

CERTIFICATE IN DIGITAL MEDIA ARTS
TOTAL CREDIT HOURS: 30

FIRST SEMESTER

Course Number	*Subject*		*Cr. Hrs.*
DMA 1015	Production Fundamentals		5
DMA 1025	Visual Storytelling		5
		TOTAL	10

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
DMA 1035	Digital Video Production		5
DMA 1045	Motion Graphics		5
		TOTAL	10

THIRD SEMESTER

Course Number	Subject		Cr. Hrs.
DMA 1055	Media for the Web		5
DMA 1065	Advanced Portfolio		5
		TOTAL	10

CERTIFICATE IN GRAPHIC DESIGN

The Graphic Design program immerses students in image creation and manipulation, digital imaging, web design, document creation, branding and logo creation, graphics for the web, camera and lighting techniques, social media and career preparation. With successful completion of this 12-month program graduates will be able to visually communicate concepts and ideas for print and web design; produce and present work for a professional client/designer environment; format and design press-ready pieces; design, host and maintain websites using web technologies; and brand and represent companies via web and social media.

Graduates will possess the knowledge, skills, and competencies to:
- Demonstrate understanding of design software commonly used in industry
- Understand and develop an effective use of typography and design
- Design and develop web pages along with social media content
- Identify and/or produce copy for advertising, packaging and web design
- Understand the effective use of color in design
- Develop cohesive branding/identity for corporations, products and services
- Demonstrate an understanding of the printing process, printing substrates and finishing processes
- Understand copyright and Digital Rights Management

Industry Employment Opportunities
- advertising agencies
- design studios
- corporate art departments
- newspapers
- magazines
- TV and radio station design departments
- printing businesses

CERTIFICATE IN GRAPHIC DESIGN
TOTAL CREDIT HOURS: 30

FIRST SEMESTER

Course Number	Subject		Cr. Hrs.
GFX 1015	Fundamentals of Graphic Design		5
GFX 1025	Intro to Computer Graphics		5
		TOTAL	10

SECOND SEMESTER

Course Number	Subject		Cr. Hrs.
GFX 1035	Web Design Essentials		5
GFX 1045	Visual Branding and Identity		5
		TOTAL	10

THIRD SEMESTER

Course Number	Subject		Cr. Hrs.
GFX 1055	Portfolio Development		5
GFX 1065	Advanced Projects		5
		TOTAL	10

Administration

President and Chief Executive Officer   **Tarek M. Sobh**
   Executive Assistant to the President   Kayleigh Reid
   Interim Director, Information Technology Service Delivery   Lynn Miller-Wietecha
   Associate Vice President, Academic Administration   Jim Jolly

Philanthropy and Alumni Engagement
Special Assistant to the President   **Greg Cassione**
   Executive Director, Alumni Engagement and Special Events   Robin G. Leclerc
   Executive Director of Development Operations   Shannon Transit
   Associate Director, Annual Giving   Rachel Vincent

Marketing and Public Affairs
Interim Vice President/Director, University Communications   **Renée Tambeau**
   Art Director   Sofia Lulgjuraj
   Manager, Advertising and Video   Sharon MacDonell
   Manager, Web Services   Christian Forrest
   Managing Editor, University News Bureau, Media Relations   Matthew Roush
   LTU Historian   Bruce J. Annett, Jr.

Academic Services
Director, Academic Advising   Leslie MichalikDirector,
eLearning Services   Lynn Miller-Wietecha
Director, University Library   Gary R. Cocozzoli
Director, Help Desk Services   Charlene Ramos

Enrollment Services
Vice President, Enrollment Management   **Lisa R. Kujawa**
   University Registrar and Director, Institutional
      Research and Academic Planning   Noreen Ferguson
      Assistant Director, Institutional Research   Megan Hollowell
   Director, Admissions   Jane T. Rohrback
      Associate Director, Admissions   Kristi Webster
      Assistant Director, Admissions   Aubriex Cason
   Director, Financial Aid   Susie Poli-Smith

Finance and Administration
Vice President, Finance and Administration   **Linda Height**
   Controller   Grant Wenzinger
   Associate Vice President + Chief Human Resources Officer   Deshawn Johnson
      Interim Benefits Manager   Carolyn Bogerty
   Director, Campus Facilities   Carey G. Valentine
      Assistant Director, Campus Facilities   Matt Maracle
   Executive Director, Campus Safety   Steve Bogdalek
      Assistant Director   Timothy McGillivary

University Architect   Joseph C. Veryser
Manager, University Bookstore   Adria Rahn

Professional Development Center
Associate Vice President, Economic Development   **Mark Brucki**
Director, Industry Partnerships and Entrepreneurship   Ross Sanders
Director, Grants and Business Development   Amy DeWys

Administration of the Colleges

Architecture and Design
Dean of Architecture and Design   **Karl Daubmann**
Associate Dean   Scott Shall
Chair, Architecture   Dale Gyure
Associate Chair, Architecture   Martin Schwartz
Chair, Art and Design   Philip Plowright

Arts and Sciences
Dean of Arts and Sciences   **Srini Kambhampati**
Associate Dean   Glen Bauer
Chair, Humanities, Social Sciences + Communication   Jason Barrett
Chair, Mathematics and Computer Science   Patrick Nelson
Chair, Natural Sciences   Julie Zwiesler-Vollick
Assistant Chair, Humanities, Social Sciences + Communication   Jeffrey Powell
Associate Chair, Mathematics and Computer Science   Ghassan Azar
Associate Chair, Natural Sciences   Jeffery Morrissette

Business and Information Technology
Dean of Business and Information Technology   **Bahman Mirshab**
Director, Business Programs   Mina Jena
Director, Doctor of Business Administration   Jacqueline Stavros

Engineering
Dean of Engineering   **Nabil Grace**
Associate Dean for Undergraduate Programs   Selin Arslan
Associate Dean, Graduate Studies and Research   Liping Liu
Chair, Civil and Architectural Engineering   Elin Jensen
Chair, Electrical and Computer Engineering   Nabih Jaber
Chair, Engineering Technology   Ken Cook
Chair, Mechanical Engineering   Badih Jawad
Chair, Biomedical Engineering   Yawen Li

Student Affairs
Dean of Students   **Kevin Finn**
Associate Dean of Students   Cyndi Spotts

Disability Services Advisor	Veronica Selke
Director, International Programs	Kalie Davio
Assistant Director	Laura Affer
Director, Academic Achievement Center	Gladys Aviles
Assistant Director	Sean Diaz
Director, Campus Dining	Jillian Williams
Career Services Advisor	Jim Ritz
Career Services Advisor	Tiffany Shamoon
University Psychologist, Clinical Counseling Services	Jeff Betman
Clinical Counselor	Christy Schulze
Director, Diversity, Equity, and Inclusion (ODEI)	Caryn Reed-Hendon
Program Coordinator	Eula Muckelroy
Program Coordinator, KCP Grant	Eula Muckleroy
Director of Recreation, Athletics, and Wellness	Scott Trudeau
Assistant Director	Mary Ann Meltzer
Coordinator, Student Life	Alison Ramirez
Director of Residence Life, University Housing	Kim Jerdine
Residence Hall Coordinator, Reuss Hall	Marissa Gonzalez
Residence Hall Coordinator, South Hall	Shannen Stiffler
Residence Hall Coordinator, Donley Hall	Marissa Gonzalez
Residence Hall Coordinator, East Hall	Tyler McLean

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.

Financial Aid and Scholarships Committee
The Financial Aid and Scholarships Committee reviews all applications for financial aid and scholarship. This committee evaluates all necessary criteria that specific scholarships require including financial need, course of study, credits completed and cumulative grade point average.

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.